This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

PRIMARY
ARITHMETIC

Educ T 119.06.445

HARVARD COLLEGE
LIBRARY

GIFT OF THE
GRADUATE SCHOOL
OF EDUCATION

3 2044 097 005 581

Frances Horton
Frances Horton

Educ T 119.06.445

HARVARD COLLEGE LIBRARY
GIFT OF THE
GRADUATE SCHOOL OF EDUCATION
May 5, 1920

COPYRIGHT, 1906, BY
FRANK H. HALL.

PRIMARY ARITHMETIC.

E-P 8

PREFATORY NOTE

THIS is a graded book. The matter is arranged in steps which the pupil of average ability can take. The few number facts to be memorized are distributed through a large part of the book, and made so conspicuous that they cannot be overlooked. The forty-five primary facts of addition, the sixty-four primary facts of multiplication, and about thirty denominate number facts are given on the upper right-hand part of certain pages, extending from page 5 to page 171. Not more than seven of these are introduced on any one page. Five are given on page 5; seven, on page 7; six, on page 9; four, on page 11; six, on page 13; seven, on page 15; six, on page 17; four, on page 19; one, on page 21; two, on page 23; two, on page 25; one, on page 31; two, on page 33, etc. *This arrangement makes definite work possible and easy.* If these facts are mastered as the pupil advances, much of the drudgery of "learning the tables" will be eliminated. After these facts are introduced, they are brought into daily use in problems that require the exercise of both the thought power and the memory of the pupil.

At the bottoms of the pages, beginning with page 11, a large number of problems are given for practice in figure manipulation. The pupil should be required to solve a sufficient number of these to give him reasonable facility and as near an approach as possible to perfect accuracy in the figure processes.

Obsolete and unusual problems — those which find rare application in daily life and those which are far removed from child life and child interests — have been omitted.

FRANK H. HALL.

CONTENTS

PART I

PAGES

Second Grade Work reviewed . . . . . 5 to 40
- Thirty-three facts of addition
- Sixteen facts of multiplication
- Five denominate number facts

PART II

Primary facts of addition and multiplication . . . . . 41, 51, 61, 71, 81, 91, 101, etc.

Concrete problems involving only such primary number facts as have been thus far introduced . . 42, 43; 52, 53; 62, 63; 72, 73, etc.

Surface and other measurements involving only primary number facts already introduced . . . 44, 54, 64, 74, 84, 94, 104, etc.

Fractions . . . . . 45, 55, 65, 75, 85, 95, 105, etc.

Fractions applied in problems involving no new primary number facts 46, 56, 66, 76, 86, 96, 106, etc.

Denominate number facts introduced and applied . . . . 47, 49; 57, 59; 67, 69; 77, etc.

Abstract problems followed by denominate number drill . . . 48, 58, 68, 78, 88, 98, 108, etc.

Calendar problems followed by fraction drill as preparation for the percentage work in the Fifth Grade 49, 59, 69, 79, 89, 99, 109, etc.

Solid measurements followed by a variety of drill problems . . 50, 60, 70, 80, 90, 100, 110, etc.

FOR DRILL IN CIPHERING

Problems on lower part of each page

Addition . . . . . 11, 16; 21, 26; 31, 36; 41, 46, etc.

Subtraction . . . . 12, 17; 22, 27; 32, 37; 42, 47, etc.

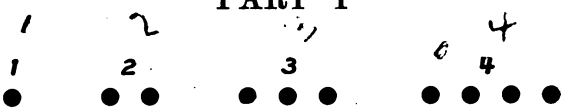
Multiplication . . . . 13, 18; 23, 28; 33, 38; 43, 48, etc.

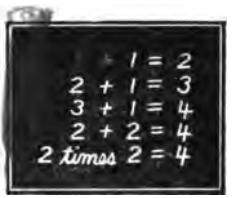
Division — to find how many times one number is contained in another, 14, 19; 24, 29; 34, 39; 44, 49, etc.

Division — to find a certain part of a number . . . . . 15, 20; 25, 30; 35; 45, 50, etc.

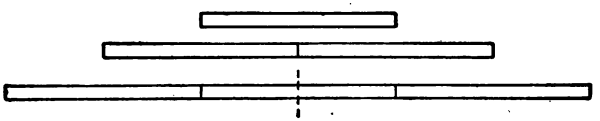
PRIMARY ARITHMETIC

PART I

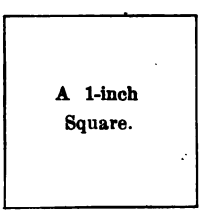




1. Two and two are ——.
2. Three and one are ——.
3. Four less two are ——.
4. Four less one are ——.
5. Two times two are ——.
6. Four are —— twos. 4 are —— 2's.
7. One half of 4 is ——. $\frac{1}{2}$ of 4 =
8. Two are one half of ——. 2 are $\frac{1}{2}$ of ——.
9. Harry earned 3 cents and his brother 1 cent; together they earned —— cents.
10. Sybil had 4 cents; she gave her brother 1 cent; she then had —— cents.
11. Frank bought 2 pencils at 2 cents each; the pencils cost —— cents.
12. Mary has 4 cents; oranges cost 2 cents each; she can buy —— oranges.
13. William paid 4 cents for 2 pencils; one pencil cost —— cents.

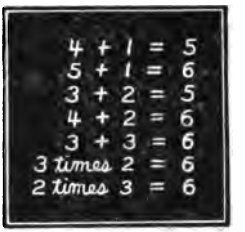


1. Two inches and 1 inch are —— inches.
2. Three inches less 1 inch are —— inches.
3. Two times 2 inches are —— inches.
4. Two inches are contained in 4 inches —— times.
5. One half of 4 inches is —— inches.
6. Two inches are one half of —— inches.
7. One half of three inches is —— inches.



8. Draw a 1-inch square.
9. Draw a 2-inch square.
10. Divide the 2-inch square into 1-inch squares.
11. A 2-inch square is how many times as large as a 1-inch square?
12. A 1-inch square equals what part of a 2-inch square?
13. Two 1-inch squares equal what part of a 2-inch square?
14. One half of 4 apples is —— apples.
15. One half of 3 apples is —— apples.
16. One half of 2 apples is —— apple.
17. Two apples are one half of —— apples.
18. One and one half apples are one half of —— apples.

1. Three and two are ——.
2. Four and two are ——.
3. Five and one are ——.
4. Six less one are ——.
5. Five less two are ——.
6. Six less three are ——. 6 less 3 =
7. Two times three are ——. 2 times 3 =
8. Three times two are ——. 3 times 2 =
9. Six are —— twos. 6 are —— 2's.
10. Six are —— threes. 6 are —— 3's.
11. One half of six is ——. $\frac{1}{2}$ of 6 =
12. Three are one half of ——. 3 are $\frac{1}{2}$ of ——.



13. Harry earned 3 cents and his brother earned 2 cents; together they earned —— cents.

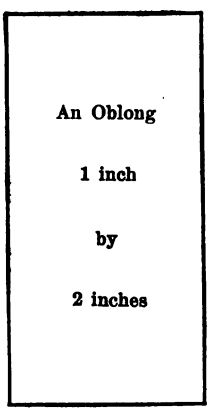
14. Sybil had 5 cents; she gave her brother 2 cents; she then had —— cents.

15. Frank bought three pencils at 2 cents each; the pencils cost —— cents.

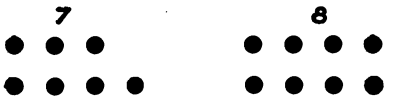
16. Mary had 6 cents; oranges cost 2 cents each; she can buy —— oranges.

17. William paid 6 cents for 2 pencils; one pencil cost —— cents.

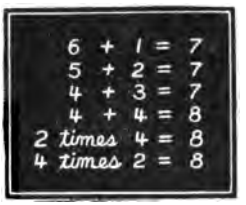
1. Three inches and 2 inches are —— inches.
2. Six inches less 2 inches are —— inches.
3. Three times 2 inches are —— inches.
4. Two inches are contained in 6 inches —— times.
5. One half of 6 inches is —— inches.
6. Three inches are one half of —— inches.
7. One half of 5 inches is ———— inches.
8. Draw an oblong 2 inches by 3 inches.
9. Divide the oblong into 1-inch squares.
10. An oblong 2 inches by 3 inches is equal to how many 1-inch squares?
11. Two 1-inch squares equal what part of an oblong 2 inches by three inches?



12. Three 1-inch squares equal what part of an oblong 2 inches by 3 inches?
13. One half of 6 oranges is —— oranges.
14. One half of 5 oranges is ———— oranges.
15. One half of 4 oranges is —— oranges.
16. One half of 3 oranges is ———— oranges.
17. One half of 2 oranges is —— orange.
18. Two oranges are one half of —— oranges.
19. Three oranges are one half of —— oranges.



1. Five and two are ——.
2. Four and four are ——.
3. Four and three are ——.
4. Eight less four are ——.
5. Seven less three are ——.
6. Seven less four are ——.



7. Two times four are ——. 2 times 4 =
8. Four times two are ——. 4 times 2 =
9. Eight are —— twos. 8 are —— 2's.
10. Eight are —— fours. 8 are —— 4's.
11. One half of eight is ——. $\frac{1}{2}$ of 8 =
12. Four are one half of ——. 4 are $\frac{1}{2}$ of——.

13. Harry earned 5 cents and his brother earned 2 cents; together they earned —— cents.

14. Sybil had 7 cents; she gave her brother 3 cents; she then had —— cents.

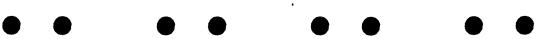
15. Frank bought 4 pencils at 2 cents each; the pencils cost —— cents.

16. Mary had 8 cents; oranges cost 4 cents each; she can buy —— oranges.

17. William paid 8 cents for 4 pencils; one pencil cost —— cents.

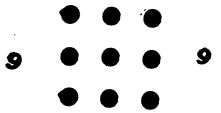
1. Four inches and 3 inches are —— inches.
2. Eight inches less 4 inches are —— inches.
3. Four times 2 inches are —— inches.
4. Two inches are contained in 8 inches —— times.
5. One half of 8 inches is —— inches.
6. Four inches are one half of —— inches.
7. One half of 7 inches is ———— inches.
8. Draw an oblong 2 inches by 4 inches.
9. Divide the oblong into 1-inch squares.
10. An oblong 2 inches by 4 inches is equal to how many 1-inch squares?
11. Two 1-inch squares equal what part of an oblong 2 inches by 4 inches?
12. Four 1-inch squares equal what part of an oblong 2 inches by 4 inches?
13. One half of 2 is ——. 2 are one half of ——.
14. One half of 4 is ——. 4 are one half of ——.

15. One third of 6 is ——. Two thirds of 6 are ——.



16. One fourth of 8 is ——. One half of 8 is ——.

17. One half of 7 is ————.



1. Six and two are ——.
2. Eight less three are ——.
3. Three times three are ——.
4. Nine are —— threes.

5. Harry earned 6 cents and his brother earned 2 cents; together they earned —— cents.

6. Frank bought 3 pencils at 3 cents each; the pencils cost —— cents.

7. Mary had 9 cents; oranges cost 3 cents each; she could buy —— oranges.

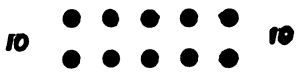
8. William paid 9 cents for 3 pencils; one pencil cost —— cents.

9. *Add at sight; then copy and add:*

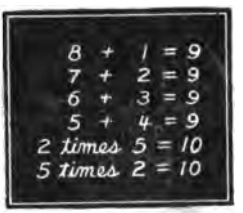
4	3	5	7	2	1	2
2	1	2	1	2	2	1
				2	2	1
6	1	3	6	2	2	2
2	1	2	1	2	2	2
				2	2	1
4	2	5	2	2	2	2
3	2	3	1	2	2	2
				2	2	1
3	4	4	5	2	2	2
3	1	4	1	2	1	2

1. Five inches and 2 inches are —— inches.
2. Eight inches less 3 inches are —— inches.
3. Three times 3 inches are —— inches.
4. Four inches are contained in 8 inches —— times.
5. Two inches are one half of —— inches.
6. Four inches are one half of —— inches.
7. One fourth of 8 inches is —— inches.
8. Two inches are one fourth of —— inches.
9. Two inches are one half of —— inches.
10. One half of 9 inches is ———— inches.
11. Draw a 3-inch square.
12. Divide the square into 1-inch squares.
13. A 3-inch square is equal to how many 1-inch squares?
14. Three 1-inch squares equal what part of a 3-inch square?
15. Six 1-inch squares equal what part of a 3-inch square?
16. *Subtract at sight; then copy and subtract:*

6	4	7	8	8	2	5	7
4	3	5	7	6	1	3	6
7	5	2	8	8	7	4	6
1	2	2	2	1	2	1	2
7	6	8	3	6	5	8	6
4	0	5	2	3	4	4	5



1. Five and four are ——.
2. Nine less three are ——.
3. Two times five are ——.
4. Ten are —— twos.
5. One half of ten is ——.
6. Five are one half of ——.



7. Harry earned 6 cents and his brother earned 3 cents; together they earned —— cents.

8. Sybil earned 9 cents; she gave her brother 4 cents; she then had —— cents.

9. Frank bought 2 pencils at 5 cents each; the pencils cost —— cents.

10. Mary has 10 cents; oranges cost 2 cents each; she can buy —— oranges.

11. William paid 10 cents for 5 pencils; one pencil cost —— cents.

12. Alice reads 2 pages each day; in 2 days she reads —— pages; in 3 days, —— pages; in 4 days, —— pages; in 5 days, —— pages.

13. Helen is 5 years old; John is 2 times as old as Helen; John is —— years old.

14. *Multiply at sight; then copy and multiply:*

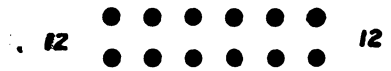
2 in.	3 in.	4 in.	5 in.	2 in.	3 in.	2 in.	2 in.
2 ·	2	2	2	3	3	4	5

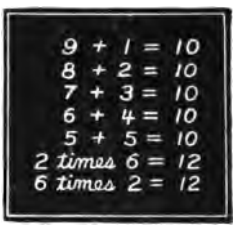
1. Six inches and 3 inches are —— inches.
2. Nine inches less 4 inches are —— inches.
3. Five times 2 inches are —— inches.
4. Five inches are contained in 10 inches —— times.
5. One half of 10 inches is —— inches.
6. Five inches are one half of —— inches.
7. Draw an oblong 2 inches by 5 inches.
8. Divide the oblong into 1-inch squares.
9. An oblong 2 inches by 5 inches is equal to how many 1-inch squares?
10. Five 1-inch squares equal what part of an oblong 2 inches by 5 inches?
11. Two 1-inch squares equal what part of an oblong 2 inches by 5 inches?

12. Two marbles are contained in 10 marbles —— times.
13. Two marbles are contained in 8 marbles —— times.
14. Two marbles are contained in 6 marbles —— times.
15. *Divide at sight; then copy and divide:*

2 in.)10 in. 3 in.)9 in. 4 in.)8 in. 5 in.)10 in.
— times.

2 in.)8 in. 2 in.)6 in. 2 in.)4 in. 3 in.)6 in.





1. Six and four are ——.
2. Ten less three are ——.
3. Two times six are ——.
4. Twelve are —— twos.
5. One half of twelve is ——.
6. Six are one half of ——.
7. Harry earned 7 cents and his brother earned 3 cents; together they earned —— cents.
8. Sybil earned 10 cents; she gave her brother 4 cents; she then had —— cents.
9. Frank bought six pencils at 2 cents each; the pencils cost —— cents.
10. May has 12 cents; oranges cost 2 cents each; she can buy —— oranges.
11. William paid 12 cents for 6 pencils; one pencil cost —— cents.

12. One third of 9 marbles is —— marbles.
13. Two thirds of 9 marbles are —— marbles.
14. *Divide at sight; then copy and divide:*

2)10 in. 3)9 in. 4)8 in. 5)10 in.

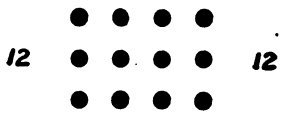
—in.

2)8 in. 2)6 in. 2)4 in. 3)6 in.

1. Four inches and 6 inches are —— inches.
2. Ten inches less 6 inches are —— inches.
3. Six times 2 inches are —— inches.
4. Six inches are contained in 12 inches —— times.
5. One half of 12 inches is —— inches.
6. Six inches are one half of —— inches.
7. Draw an oblong 2 inches by 6 inches.
8. Divide the oblong into 1-inch squares.
9. An oblong 2 inches by 6 inches is equal to how many 1-inch squares?
10. Six 1-inch squares equal what part of an oblong 2 inches by 6 inches?
11. Two 1-inch squares equal what part of an oblong 2 inches by 6 inches?
12. Six apples and 3 apples are —— apples. $6+3=$
13. Seven eggs and 3 eggs are —— eggs. $7+3=$
14. Four cows and 3 cows are —— cows. $4+3=$
15. Four horses and 4 horses are —— horses. $4+4=$
16. *Add at sight; then copy and add:*

5	5	6	3	2	2	1
4	5	3	2	2	1	3
			2	1	2	2
7	6	8	1	2	3	1
2	4	2	2	2	1	2
			2	1	2	2
8	7	9	1	2	2	1
1	3	1	3	3	1	2

17



1. Seven and four are ——.
2. Eleven less three are ——.
3. Three times four are ——.
4. Twelve are —— threes.
5. One third of twelve is ——.
6. Four are one third of ——.

7. Harry earned 8 cents and his brother earned 3 cents; together they earned —— cents.

8. Sybil earned 11 cents; she gave her brother 5 cents; she then had —— cents.

9. Frank bought 3 pencils at 4 cents each; the pencils cost —— cents.

10. Mary has 12 cents; oranges cost 4 cents each; she can buy —— oranges.

11. William paid 12 cents for 3 pencils; one pencil cost —— cents.

12. Ten miles less 5 miles are —— miles. $10-5=$

13. Ten miles less 3 miles are —— miles. $10-3=$

14. *Subtract at sight; then copy and subtract:*

9	10	9	9	10	10	9	10	10
5	5	6	7	6	8	8	7	9
10	10	9	10	10	9	9	10	9
4	5	3	2	4	2	1	3	1

19

1. Six inches and 5 inches are —— inches.

2. Eleven inches less 4 inches are —— inches.

3. Two times 6 inches are —— inches.

4. Four inches are contained in 12 inches —— times.

5. One fourth of 12 inches is —— inches.

6. Three inches are one fourth of —— inches.

7. Draw an oblong 3 inches by 4 inches.

8. Divide the oblong into 1-inch squares.

9. An oblong 3 inches by 4 inches is equal to how many 1-inch squares?

10. Four 1-inch squares equal what part of an oblong 3 inches by 4 inches?

11. Three 1-inch squares equal what part of an oblong 3 inches by 4 inches?

12. James reads 3 pages each day; in 2 days he reads —— pages; in 3 days, —— pages; in 4 days, —— pages.

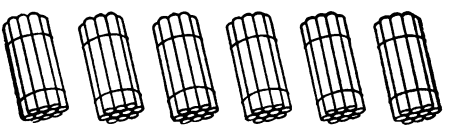
13. *Multiply at sight; then copy and multiply:*

2 cents	2 cents	2 cents	2 cents
6	5	4	3
2 cents	3 cents	3 cents	3 cents
2	4	3	2
4 cents	4 cents	5 cents	6 cents
3	2	2	2

19

1. Seven and five are ——.
2. Twelve less four are ——.
3. Four times three are ——.
4. Twelve are —— fours.

5. One fourth of twelve is ——. $\frac{1}{4}$ of 12 =
6. Three are one fourth of ——. 3 are $\frac{1}{4}$ of ——.



7. Two tens are ——.
8. Three tens are ——.
9. Four tens are ——.
10. Five tens are ——.
11. Six tens are ——.
12. Seven tens are ——.
13. Eight tens are ——.
14. Nine tens are ——.
15. Ten tens are one hundred.
16. Ten, twenty, thirty, forty, fifty, sixty, seventy, eighty, ninety, one hundred.
17. 10, 20, 30, 40, 50, 60, 70, 80, 90, 100.

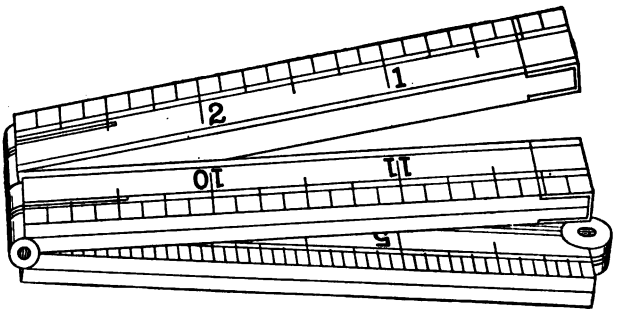
---

18. Three cents are contained in 12 cents —— times.
19. *Divide at sight; then copy and divide:*

3¢)12¢ 2¢)12¢ 4¢)12¢ 5¢)10¢

—— times

3¢)8¢ 3¢)9¢ 2¢)10¢ 2¢)6¢



1. *Twelve inches are one foot.*

2. One half of a foot is —— inches.

3. One half of a foot and 2 inches is —— inches.

4. One half of a foot less 2 inches is —— inches.

5. One fourth of a foot is —— inches.

6. One fourth of a foot and 2 inches are —— inches.

7. Three fourths of a foot are —— inches.

8. Three times 3 inches are —— inches.

9. Three inches are contained in 12 inches — times.

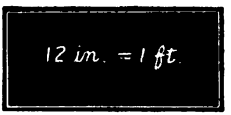
---

10. One third of 12 cents is —— cents.

11. One fifth of 10 cents is —— cents.

12. *Divide at sight; then copy and divide:*

3)12¢	2)12¢	5)10¢	4)12¢
2)8¢	3)9¢	2)10¢	2)6¢



1. The tallest pupil in the class is —— feet —— inches in height.

2. The shortest pupil in the class is —— feet —— inches in height.

3. The blackboard is —— feet —— inches wide.

4. The door is —— feet —— inches wide and —— feet —— inches high.

5. The blackboard is —— feet —— inches long.

6. Four tens and 3 are ——. 4 10's + 5 =

7. Six tens and 5 are ——. 6 10's + 7 =

8. Eight tens and 9 are ——. 8 10's + 2 =

9. Three tens and 4 are ——. 3 10's + 6 =

10. One half of 6 tens is ——. $\frac{1}{2}$ of 60 =

11. One half of 8 tens is ——. $\frac{1}{2}$ of 80 =

12. One half of 4 tens is ——. $\frac{1}{2}$ of 40 =

13. Six tens and 3 tens are ——. 60 + 30 =

14. Five tens and 2 tens are ——. 50 + 20 =

15. *Add at sight; then copy and add:*

20	30	10	40	40	50
30	40	30	50	20	20
23	42	33	54	63	57
20	20	40	20	10	30
23	35	52	46	73	61
21	22	31	22	12	35

1. *Two pints are one quart.*

2. Six pints are —— quarts. 8 pints =

3. Four pints are —— quarts. 10 pints =

4. Twelve pints are —— quarts. 3 pints =

5. One quart is —— pints. 3 quarts =

6. Two quarts are —— pints. 5 quarts =

7. Four quarts are —— pints. 6 quarts =

8. Six quarts and 5 quarts are —— quarts.

9. Two quarts and 1 pint and 2 quarts and 1 pint are —— quarts.

10. Seven quarts less three quarts are —— quarts.

11. Five quarts less 1 pint are ————.

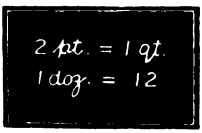
12. Two quarts are contained in 10 quarts —— times.

13. One half of 7 quarts is ————.

14. *Subtract at sight; then copy and subtract:*

60	70	80	50	30	40
20	40	30	10	20	30
56	64	73	59	36	47
21	22	31	22	15	27

1. Milk costs 6¢ a quart. Two quarts cost —— cents. One pint costs —— cents. Three pints cost —— cents.



2. *One dozen is* 12. One half a dozen is ——. One fourth of a dozen is ——. Three fourths of a dozen are ——.

3. One half of 2 is ——. 2 are one half of ——.
4. One half of 4 is ——. 4 are one half of ——.
5. One half of 6 is ——. 6 are one half of ——.

6. One half of 20 is ——. 20 are one half of ——.
7. One half of 40 is ——. 40 are one half of ——.
8. One half of 10 is ——. 10 are one half of ——.

9. One half of 50 is ——. 50 are one half of ——.

10. *Multiply at sight; then copy and multiply:*

20¢	30¢	10¢	50¢	40¢	30¢
3	3	3	2	2	2
21¢	33¢	12¢	54¢	43¢	32¢
2	2	2	2	2	2
23¢	32¢	12¢	21¢	13¢	31¢
3	3	3	3	3	3
12¢	21¢	22¢	21¢	44¢	34¢
4	4	4	5	2	2

1. *The* **area** *of a figure is the amount of its surface.* The area of a 2-inch square is 4 square inches.

2. The area of a 3-inch square is —— square inches.

3. The area of an oblong 2 inches by 3 inches is —— square inches.

4. The area of an oblong 2 inches by 4 inches is —— square inches.

5. The area of an oblong 2 inches by 5 inches is —— square inches.

6. The area of any oblong 2 inches by 6 inches is —— square inches.

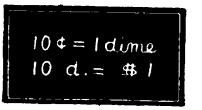
7. The area of an oblong 3 inches by 4 inches is —— square inches.

8. Can you tell the area of an oblong that is 2 inches wide and 2 and one half inches long?

9. Draw the oblong described in No. 8, and divide it into 4 1-inch squares and 2 halves of a 1-inch square. Two halves of a 1-inch square are 1 square inch. The area of the oblong is —— square inches.

10. *Divide at sight; then copy and divide:*

2¢)60¢	2¢)40	2¢)20¢	2¢)80¢
— times.			
3¢)60¢	3¢)90¢	4¢)80¢	5¢)50¢
3¢)69¢	3¢)96¢	4¢)84¢	5¢)55¢



1. Two dimes are —— cents.
2. Three dimes are —— cents.
3. Four dimes are —— cents.
4. Twenty-five cents are two dimes and —— cents.
5. Fifty-seven cents are —— dimes and —— cents.
6. Seventy-six cents are —— dimes and —— cents.
7. *Two nickels equal* 1 *dime.*
8. Two dimes and 1 nickel are —— cents.
9. Three dimes and 1 nickel are —— cents.
10. Four dimes and 1 nickel are —— cents.
11. One half a dollar is —— cents.
12. One fourth of a dollar is —— cents.
13. We sometimes call a fourth of a dollar "a quarter." Two "quarters" equal —— cents. Three "quarters" equal —— cents. Four "quarters" equal —— cents, or 1 dollar.
14. A half a dollar and a "quarter" are —— cents.
15. A "quarter," 2 dimes, and a nickel are —— cents.
16. *Divide at sight; then copy and divide:*

2)80¢	2)20¢	2)40¢	2)60¢
3)90¢	3)60¢	3)30¢	4)80¢
3)63¢	3)96¢	4)84¢	5)55¢

1. When we *add* numbers we find their **sum.**
2. The sum of 5 and 4 is ——.
3. The sum of 20 and 6 is ——.
4. The sum of 21 and 4 is ——.
5. The sum of 33 and 5 is ——.
6. The sum of 42 and 10 is ——.
7. The sum of 53 and 12 is ——.
8. 26 and 12 = 37 and 12 = 41 and 12 =
9. 22 and 12 = 63 and 12 = 71 and 12 =
10. James rode 7 miles in the morning and 5 miles in the afternoon; in the day he rode —— miles. The sum of 7 and 5 is ——.
11. The temperature at 9 o'clock was 70 degrees above zero; at noon it was 15 degrees higher; at noon it was ——. The sum of 70 and 15 is ——.

12. *For Drill in Adding*

Can you give the 32 sums in 50 seconds?

7	8	7	3	4	6	5	6
1	2	5	1	2	1	5	6
5	5	2	9	8	4	3	2
2	1	2	3	1	3	2	1
4	6	5	5	3	6	6	8
1	3	3	4	3	2	4	4
7	9	7	7	9	8	4	6
2	1	3	4	2	3	4	5

1. When we *subtract* one number from another we find the **difference** of the numbers.

2. The difference of 12 and 4 is ——.

3. The difference of 9 and 3 is ——.

4. The difference of 30 and 20 is ——.

5. The difference of 36 and 10 is ——.

6. The difference of 38 and 12 is ——.

7. 37 less 12 = 46 less 12 = 55 less 12 =

8. 24 less 12 = 33 less 12 = 49 less 12 =

9. William has a new bicycle. There is a cyclometer on it. When William had used the bicycle two days, the cyclometer showed that he had ridden 12 miles; he rode 7 miles the first day; the second day he rode —— miles. The difference of 12 and 7 is ——.

10. The temperature at noon was 85 degrees above zero; at 5 o'clock in the afternoon it was 12 degrees lower; at 5 o'clock it was ——. The difference of 85 and 12 is ——.

11. *Subtract at sight; then copy and subtract:*

30	60	70	40	50	80
5	3	8	6	4	2
90	20	50	40	70	30
7	2	6	9	5	6
80	30	40	50	60	20
1	4	5	8	6	3

1. When we *multiply* one number by another we find the **product** of the numbers.

2. The product of 5 and 2 is ——.
3. The product of 6 and 2 is ——.
4. The product of 3 and 4 is ——.
5. The product of 3 and 2 is ——.
6. The product of 10 and 2 is ——.
7. The product of 20 and 2 is ——.
8. The product of 20 and 3 is ——.

9. I have an orchard in which there are 4 rows of trees; in each row there are 10 trees; in all there are —— trees. Ten trees multiplied by 4 are —— trees. Four times 10 trees are —— trees.

10. The length of one side of a 3-inch square is —— inches; the length of all its sides together is —— inches. Three inches multiplied by 4 are —— inches. Four times 3 inches are —— inches. The product of 3 and 4 is ——.

11. *Multiply at sight; then copy and multiply:*

$30	$20	$20	$10	$30	$40
2	3	4	5	3	2
$31	$24	$21	$12	$12	$11
3	2	4	3	4	5
$13	$13	$14	$23	$22	$23
3	2	2	2	4	3

1. When we *divide* one number by another we find the **quotient.**

2. The quotient of 8 divided by 2 is ——.

3. The quotient of 8 divided by 4 is ——.

4. The quotient of 10 divided by 5 is ——.

5. The quotient of 10 divided by 2 is ——.

6. The quotient of 12 divided by 6 is ——.

7. The quotient of 40 divided by 2 is ——.

8. Byron sold papers for which he received 40 cents; he sold the papers at 2 cents each; he sold —— papers. Two cents are contained in 40 cents —— times. The quotient of 40 divided by 2 is ——.

9. One half of 12 is ——. 2 is contained in 12 —— times.

10. One half of 20 is ——. 2 is contained in 20 —— times.

11. One half of 24 is ——. 2 is contained in 24 —— times.

12. One half of 28 is ——. 2 is contained in 28 —— times.

13. *Divide at sight; then copy and divide:*

$2)\underline{\$60}$ $2)\underline{\$40}$ $2)\underline{\$20}$ $2)\underline{\$10}$

— times.

$3)\underline{\$99}$ $3)\underline{\$63}$ $3)\underline{\$36}$ $4)\underline{\$84}$

$2)\underline{\$48}$ $2)\underline{\$26}$ $5)\underline{\$55}$ $5)\underline{\$100}$

1. The sum of 6 and 2 is ——.
2. The difference of 6 and 2 is ——.
3. The product of 6 and 2 is ——.
4. The quotient of 6 divided by 2 is ——.

5. The sum of 40 and 20 is ——.
6. The difference of 40 and 20 is ——.
7. The product of 20 and 2 is ——.
8. The quotient of 20 divided by 2 is ——.

9. The sum of 30 and 20 is ——.
10. The difference of 30 and 20 is ——.
11. The product of 30 and 3 is ——.
12. The quotient of 30 divided by 3 is ——.

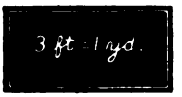
13. The sum of 24 and 2 is ——.
14. The difference of 24 and 2 is ——.
15. The product of 24 and 2 is ——.
16. The quotient of 24 divided by 2 is ——.
17. The product of 5 and 2 is ——. 2 times 5 are ——. 5 times 2 are ——.

18. *Divide at sight; then copy and divide:*

2)$20	2)$26	2)$28	2)$44
3)$12	3)$39	3)$63	3)$96
4)$84	4)$48	5)$55	5)$100

1. *Three feet are one yard.*

2. How many yards high is the door?



3. How many yards long is the schoolroom?

4. How many yards wide is the schoolroom?

5. One yard is —— feet.

6. Two yards are —— feet.

7. Three yards are —— feet.

8. Four yards are —— feet.

9. Four yards and 1 foot are —— feet.

10. One yard and 2 feet are —— feet.

11. Two yards and 2 feet are —— feet.

12. Three yards and 2 feet are —— feet.

13. Four yards and 2 feet are —— feet.

14. Six feet are —— yards.

15. Seven feet are —— yards and —— foot.

16. Eight feet are —— yards and —— feet.

17. Nine feet are —— yards.

18. One half of 1 yard is ———— feet.

19. One third of 1 yard is —— foot.

20. Two thirds of 1 yard are —— feet.

21. *Add at sight; then copy and add:*

34	43	52	71	65	82
6	7	8	9	5	8
55	27	13	53	47	66
6	4	8	8	4	5

1. The **perimeter** of a figure is the distance around it. The perimeter of a 2-inch square is —— inches.

2. The perimeter of a 1-inch square is —— inches.

3. The perimeter of a 3-inch square is —— inches.

4. The perimeter of an oblong 2 inches by 3 inches is —— inches.

5. The perimeter of an oblong 1 inch by 2 inches is —— inches.

6. The perimeter of an oblong 1 inch by 3 inches is —— inches.

7. The perimeter of an oblong 2 inches by $2\frac{1}{2}$ inches is —— inches.

---

8. Read page 24 of this book.

9. Draw a 2-foot square upon the blackboard.

10. The area of a 2-foot square is —— square feet.

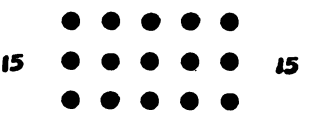
11. The perimeter of a 2-foot square is —— feet.

12. The area of a 3-foot square is —— square feet.

13. The perimeter of a 3-foot square is —— feet.

14. *Subtract at sight; then copy and subtract:*

61	81	91	71	41	51
6	4	8	5	3	9
31	41	61	81	71	51
8	5	4	6	7	9



1. I obtain a sum by ——.
2. I obtain a difference by ——.

3 times 5 = 15
5 times 3 = 15

3. I obtain a product by ——.
4. I obtain a quotient by ——.
5. The answer in addition is a ——.
6. The answer in subtraction is a ——.
7. The answer in multiplication is a ——.
8. The answer in division is a ——.
9. The sum of 5 and 3 is ——. 5 and 3 = ——.
10. The difference of 5 and 3 is ——. 5 less 3 =
11. The product of 5 and 3 is ——. 3 times 5 =
12. The quotient of 15 divided by 3 is ——.
13. When I put two numbers together, I ——.
14. When I take one number from another, I ——.
15. When I take a number a certain number of times, I ——.
16. *Multiply at sight; then copy and multiply:*

25 feet	15 feet	35 feet	5 feet
2	2	2	3
23 feet	12 feet	31 feet	3 feet
3	4	3	5

1. Beginning with 2, add by 2's to 30.

2. Beginning with 1, add by 2's to 31.

3. Walk slowly across the room, saying *two*, at the first step; *four*, at the second step; *six*, at the third; etc.

4. Walk rapidly, and speak as directed in No. 3.

5. Say *one* at the first step, *three* at the second, *five* at the third, etc.

6. Beginning with 10, add by 10's to 100.

7. Beginning with 1, add by 10's to 101.

8. Beginning with 2, add by 10's to 102.

9. Draw upon the blackboard a 1-yard square.

10. Divide the 1-yard square into 1-foot squares.

11. The area of a 1-yard square is —— square feet.

12. The perimeter of a 1-yard square is —— yards.

13. The perimeter of a 1-yard square is —— feet.

14. The perimeter of an oblong 1 yard by 1 foot is —— feet.

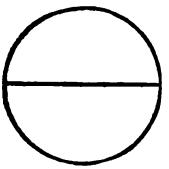
15. The perimeter of an oblong 1 yard by 2 feet is —— feet.

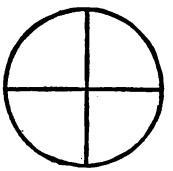
16. *Divide at sight; then copy and divide:*

2 ft.)12 ft. 2 ft.)10 ft. 2 ft.)20 ft.

2 ft.)40 ft. 2 ft.)48 ft. 2 ft.)64 ft.

2 ft.)86 ft. 2 ft.)100 ft.





1. In one whole there are —— halves.

2. In one whole there are —— fourths.

3. In one half there are —— fourths.

4. One half and 1 fourth are —— fourths.

5. One half less 1 fourth is —— fourth.

6. Four times 1 fourth are —— fourths, or ——
——.

7. One fourth is contained in 1 half —— times.

8. One half of 1 half is ——.

9. Robert had 1 fourth of a pie; Arthur had 3 times as much; Arthur had —— —— of a pie.

10. Mrs. Williams divided a pie equally among some children, giving to each child 1 fourth of a pie; there were —— children.

11. Mrs. Smith divided 1 half of a pie equally between two children; each child received —— ——
of a pie.

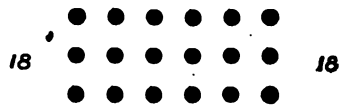
12. *Divide at sight; then copy and divide:*

2)20 ft.	2)10 ft.	2)60 ft.	2)80 ft.
2)68 ft.	2)86 ft.	2)42 ft.	2)100 ft.

1. One inch is —— half-inches.
2. One inch is —— fourth-inches.
3. One half-inch is —— fourth-inches.
4. Two half-inches are —— inch.
5. Four fourth-inches are —— inch.
6. Two fourth-inches are —— —— of an inch.
7. One half-inch and 1 fourth-inch are —— fourth-inches.
8. One half-inch less 1 fourth-inch is —— ——.
9. Two times 1 fourth-inch are —— fourth-inches, or —— half-inch.
10. One fourth-inch is contained in 1 half-inch —— times.

11. *Add at sight; then copy and add:*

29	39	49	59	1	1
2	2	2	2	2	2
				2	2
29	39	49	59	2	2
3	3	3	3	2	2
				2	2
29	39	49	59	2	2
4	4	4	4	2	1
				2	2
29	39	49	59	2	2
2	2	2	2	2	2
10	10	10	10	2	1



1. One half of 6 is ——.
2. Six is one half of ——.
3. One third of 6 is ——.
4. Six is one third of ——.

3 times 6 = 18
6 times 3 = 18

5. Six cents and 3 cents are —— cents.
6. Seven cents less 3 cents are —— cents.
7. Three times 6 cents are —— cents.
8. Three cents are contained in 18 cents —— times.
9. One third of 18 cents is —— cents.
10. Nine apples and 3 apples are —— apples.
11. Nine apples less 3 apples are —— apples.
12. Six times 3 apples are —— apples.
13. Six apples are contained in 18 apples —— times.
14. One third of 15 apples is —— apples.
15. *Subtract at sight; then copy and subtract:*

62	42	72	32	22	52
7	4	6	5	3	8
42	62	32	72	22	52
5	4	6	7	7	4
32	82	62	92	52	42
7	9	3	6	5	6

1. John had 23 cents, and his mother gave him 5 cents more; he then had —— cents.

2. William had 37 cents; he spent 5 cents; he then had —— cents.

3. David paid 30 cents each for 2 books; the books cost —— cents.

4. George paid 60 cents for some tablets; the price of the tablets was 10 cents each; there were —— tablets.

5. Harry's new drawing pencils cost 40 cents; there were 4 of them; each pencil cost —— cents.

6. In one coop there were 21 chickens; in another there were 8; in both there were —— chickens.

7. Susan had 46 chickens; 4 of them died; she then had —— chickens.

8. In each of 3 coops there were 20 chickens; in all there were —— chickens.

9. *Multiply at sight; then copy and multiply:*

16 yards × 2	26 yards × 2	36 yards × 2	46 yards × 2
32 yards × 3	22 yards × 4	3 yards × 5	3 yards × 6
15 yards × 3	16 yards × 3	25 yards × 3	26 yards × 3

1. Imagine a 1-inch square drawn upon paper. It has how many sides? Each side is how long? How far is it around a 1-inch square?

2. Imagine a 2-inch square drawn upon paper. It has how many sides? Each side is how long? How far is it around a 2-inch square?

3. Imagine four 1-inch squares cut from paper. Arrange them so that they will together make a square. What kind of a square is it?

4. Imagine a square whose perimeter is 8 inches. How many inches across one side of the square? This square is how many times as large as a 1-inch square?

5. Imagine an oblong bounded by two vertical lines each 1 inch long, and two horizontal lines each 3 inches long. How many such oblongs are equal to a 3-inch square?

6. Imagine that you have a stick of candy 1 foot long. Imagine that you give one third of it to your brother. Imagine that you break the remainder into two equal pieces. How many inches long is each piece?

7. *Divide at sight; then copy and divide:*

3 yd.)12 yd. 3 yd.)18 yd. 3 yd.)15 yd.

3 yd.)60 yd. 4 yd.)12 yd. 4 yd.)84 yd.

5 yd.)15 yd. 6 yd.)18 yd.

4 0

Thirty-three Facts of Addition

1	2	3	2	4	3	5	4	3	6	5	4	7	6	5	4
1	1	1	2	1	2	1	2	3	1	2	3	1	2	3	4
2	3	4	4	5	5	6	6	6	7	7	7	8	8	8	8

8	7	6	5	9	8	7	6	5	9	8	7	6	9	8	7	6
1	2	3	4	1	2	3	4	5	2	3	4	5	3	4	5	6
9	9	9	9	10	10	10	10	10	11	11	11	11	12	12	12	12

Sixteen Facts of Multiplication

2 times 2 = 4
2 times 3 = 6
2 times 4 = 8
2 times 5 = 10
2 times 6 = 12

3 times 2 = 6
3 times 3 = 9
3 times 4 = 12
3 times 5 = 15
3 times 6 = 18

4 times 2 = 8
4 times 3 = 12

5 times 2 = 10
5 times 3 = 15

6 times 2 = 12
6 times 3 = 18

Five Denominate Number Facts

12 inches = 1 foot
3 feet = 1 yard

10 cents = 1 dime
10 dimes = 1 dollar

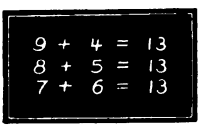
2 pints = 1 quart

Word List

add	addition	sum	square
subtract	subtraction	difference	oblong
multiply	multiplication	product	area
divide	division	quotient	perimeter

PART II

1. Nine and 4 are ——.
2. Seven and 5 are ——.
3. Eight and 5 are ——.
4. Seven and 6 are ——.



5. Thirteen less 9 are ——. 13 less 7 are ——.
6. Thirteen less 8 are ——. 13 less 4 are ——.
7. Thirteen less 6 are ——. 13 less 5 are ——.
8. 13 is 2 6's and ——. 13 is 2 5's and ——.
9. 13 is 3 4's and ——. 13 is 4 3's and ——.
10. Thirteen is 1 dozen and ——.
11. Thirteen inches are 1 foot and —— inch.
12. Thirteen cents are 1 dime and —— cents.
13. Thirteen pints are 6 quarts and —— pint.
14. Thirteen feet are —— yards and —— foot.

Add at sight; then copy and add:

a	*b*	*c*	*g*	*h*	*i*
39	49	59	23	22	25
4	4	4	3	2	1
			3	2	3
d	*e*	*f*	3	2	1
28	38	68	1	1	2
5	5	5	3	2	3

1. Seven quarts of milk and 6 quarts of milk are —— quarts of milk.

2. Eight loads of hay and 4 loads of hay are —— loads of hay.

3. Thirteen plates less 4 plates are —— plates.

4. Thirteen horses less 6 horses are —— horses.

5. Three times 5 books are —— books.

6. Three times 6 birds are —— birds.

7. Two inches are contained in 12 inches —— times.

8. Two inches are contained in 13 inches —— times with —— inch remainder.

9. One half of 12 inches is —— inches.

10. One half of 13 inches is ———— inches.

11. One third of 12 inches is —— inches.

12. One third of 13 inches is ———— inches.

13. One fourth of 12 inches is —— inches.

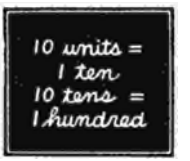
14. One fourth of 13 inches is ———— inches.

15. One sixth of 12 splints is —— splints.

16. Two sixths of 12 splints are —— splints.

Subtract at sight; then copy and subtract:

a	*b*	*c*	*d*	*e*	*f*
73	73	73	73	73	73
1	2	3	4	5	6



1. Mary had 13 canaries; she sold eight of them; she then had —— canaries.

2. George lives 5 miles north of the depot; James lives 5 miles south of the depot; from George's home to James's home it is —— miles.

3. William had 13 cents; he bought 2 oranges at 5 cents each; he then had —— cents.

4. Mr. Nelson paid 5 dollars for a load of wood and 8 dollars for a load of coal; the coal cost —— dollars more than the wood, and the wood and coal together cost —— dollars.

5. Robert is 8 years old and his sister is 5 years older than he is; Robert's sister is —— years old.

Write in figures:

a. Two hundred twenty-five.
b. Three hundred forty-six.
c. Four hundred seven.
d. Five hundred twenty.

Multiply:

e	*f*	*g*	*h*	*i*
$123	$232	$202	$207	$306
3	3	3	2	3

j	*k*	*l*	*m*	*n*
$205	$205	$203	$103	$103
2	3	4	5	6

1. Draw an oblong 4 inches long and 3 inches wide. Divide it into 1-inch squares. There are —— rows of squares and in each row there are —— squares. An oblong 4 inches by 3 inches contains —— square inches.

2. Three times 4 square inches are —— square inches.

3. Four times 3 square inches are —— square inches.

4. Draw an oblong $6\frac{1}{2}$ inches long and 2 inches wide. Divide it into 12 1-inch squares and 2 halves of 1-inch squares. The area of this oblong is —— square inches.

5. Two times $6\frac{1}{2}$ square inches are —— square inches.

6. Six and 1 half times 2 sq. inches are —— sq. in.

7. Thirteen is 10 and ——. 12 is 10 and ——.

8. Eleven is 10 and ——. 13 is 8 and ——.

9. An old hen sat on 13 eggs; all the eggs hatched except 4; there were —— chickens.

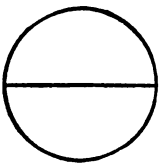
10. Henry had a string 13 feet long; he divided it into 3 equal pieces; each piece was —— long.

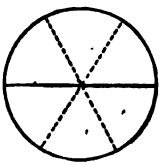
Divide:

a	*b*	*c*	*d*
\$6)\$120	\$4)\$120	\$2)\$120	\$3)\$120

— times

e	*f*	*g*	*h*
\$6)\$126	\$4)\$128	\$2)\$124	\$3)\$129





1. One whole is —— halves.
2. One whole is —— sixths.
3. One half is —— sixths.
4. One half and one sixth are —— sixths.
5. One half less one sixth is —— sixths.
6. One half and two sixths are —— sixths.
7. One half less two sixths is —— sixth.

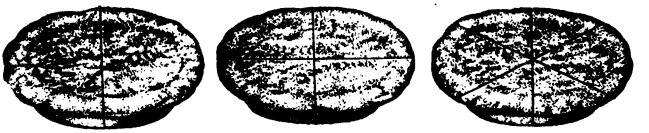
8. Two times one sixth are —— sixths.
9. Three times one sixth are —— ——.
10. Two times two sixths are —— sixths.
11. Three times two sixths are —— ——.

12. One sixth is contained in one half —— times.
13. Two sixths are contained in one whole —— times.

14. One third of one half is —— ——.
15. One half of one half is —— ——.

Divide:

a	*b*	*c*	*d*
6)$120	4)$120	2)$120	3)$120
e	*f*	*g*	*h*
6)$126	4)$128	2)$124	3)$129



1. One half of a pie and 1 fourth of a pie are ———.

2. One half of a pie and 1 sixth of a pie are ———.

3. One half of a pie less 1 fourth of a pie is ———.

4. One half of a pie less 1 sixth of a pie is ———.

5. Three times 2 sixths of a pie are ——.

6. Two sixths of a pie are contained in 1 whole pie —— times.

7. One third of 1 half of a pie is ———.

8. Robert had 1 sixth of a pie; Arthur had three times as much; Arthur had ———.

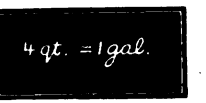
9. Mrs. Johnson divided a pie equally among some children, giving to each child 1 sixth of a pie; there were —— children.

10. Mrs. Clark divided one half of a pie equally among three children; each child received ———.

Add:

a	*b*	*c*	*d*	*e*	*f*
138	148	158	$4\frac{1}{2}$	$2\frac{1}{2}$	$3\frac{1}{2}$
5	5	5	$4\frac{1}{2}$	$2\frac{1}{2}$	$3\frac{1}{2}$

1. *Four quarts are one gallon.*
2. Eight quarts are —— gallons.
3. Twelve quarts are —— gallons.



4. One gallon is —— quarts.
5. Two gallons are —— quarts.
6. Three gallons are —— quarts.

7. One quart is —— —— of a gallon.
8. Two quarts are —— —— of a gallon.
9. Three quarts are —— —— of a gallon.
10. Four quarts are —— gallon.
11. Five quarts are —— and —— —— gallons.

12. One quart is —— pints. 1 gallon is —— pints.
13. Two quarts are —— pints. $\frac{1}{2}$ gallon is —— pints.
14. At 5¢ a quart, 1 half-gallon of milk cost —— cents.
15. At 12¢ a gallon, 2 quarts of milk cost —— cents.
16. At 40¢ a gallon, 2 quarts of sirup cost —— cents.
17. At 20¢ a quart, 1 half-gallon of oil costs —— cents.

Subtract:

a	*b*	*c*	*d*	*e*
242	262	273	233	253
106	106	106	106	106

1. The sum of 40 and 2 is ——.
2. The difference of 40 and 2 is ——.
3. The product of 40 and 2 is ——.
4. The quotient of 40 divided by 2 is ——.

5. The sum of two numbers is 12; one of the numbers is 8; the other number is ——.
6. The sum of two numbers is 13; one of the numbers is 7; the other number is ——.
7. The sum of two numbers is 100; one of the numbers is 40; the other number is ——.
8. The sum of two numbers is 13; one of the numbers is 8; the other number is ——.

9. One quart and one pint are —— pints.
10. One gallon and one quart are —— quarts.
11. One foot and one inch are —— inches.
12. One yard and one foot are —— feet.
13. One dime and one cent are —— cents.
14. One half and one fourth are —— fourths.
15. One half and one sixth are —— sixths.

Multiply:

a	*b*	*c*	*d*
204 quarts	203 quarts	204 quarts	203 quarts
3	4	2	5

e	*f*	*g*	*h*
306 quarts	306 quarts	103 quarts	102 quarts
2	3	6	5

1. *Seven days are one week.*

2. To-day is Monday. Seven days from to-day will be ——. Eight days from to-day will be ——. Nine days from to-day will be ——.

7 da. = 1 wk.

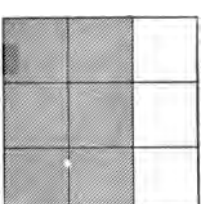
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday

3. Mrs. Blake buys 1 pint of milk each day. In one week she buys —— pints or —— and —— —— quarts.

4. Mrs. Jones buys 1 quart of milk each day. In one week she buys —— quarts or —— and —— —— gallons.

● ● ● ● ● ● ○ ○ ○

5. Six balls are 2 thirds of —— balls.



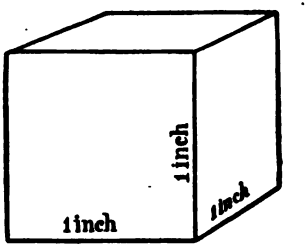
6. Six squares are 2 thirds of —— squares.

7. Six inches are 2 thirds of —— inches.

8. Six splints are 2 thirds of —— splints.

Divide:

a	*b*	*c*
2 qt.)70 quarts	2 qt.)50 quarts	2 qt.)90 quarts
— times.		



1. A cube has —— equal square faces.

2. A cube has —— corners and —— edges.

3. Each face of a 1-inch cube is a —— square.

4. The area of 1 face of a 1-inch cube is —— square inch. The area of all the faces of a 1-inch cube is —— square inches.

5. One half of 7 is ———. 2 is contained in 7 ——— times.

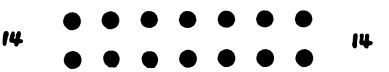
6. One half of 9 is ———. 2 is contained in 9 ——— times.

7. One half of 11 is ———. 2 is contained in 11 ——— times.

8. One half of 13 is ———. 2 is contained in 13 ——— times.

Divide :

a	*b*	*c*
2)70 quarts	2)50 quarts	2)90 quarts
d	*e*	*f*
2)30 quarts	2)470 quarts	2)450 quarts



1. Nine and 5 are ——.
2. Eight and 5 are ——.
3. Seven and 5 are ——.

4. Fourteen less 9 are ——.
5. Fourteen less 5 are ——.
6. Fourteen less 6 are ——.
7. 14 is —— 7's. 14 is —— 2's.
8. Fourteen is 1 dozen and ——.
9. Fourteen inches are 1 foot and —— inches.
10. Fourteen cents are 1 dime and —— cents.
11. Fourteen pints are —— quarts.
12. Fourteen quarts are 3 gallons and —— quarts.
13. Fourteen feet are 4 yards and —— feet.
14. Beginning with 1, add by 3's to 19. Do this several times every day for a week.

Add:

a	*b*	*c*	*d*	*i*	*j*
138	148	128	$175\frac{1}{2}$	3	1
106	106	106	$102\frac{1}{2}$	3	2
				3	3
e	*f*	*g*	*h*	3	1
139	149	129	$173\frac{3}{4}$	3	2
105	105	105	$104\frac{1}{4}$	3	3

1. Eight gallons of milk and 6 gallons of milk are —— gallons of milk.

2. Nine pairs of ponies and 4 pairs of ponies are —— pairs of ponies.

3. Fourteen loads of hay less 9 loads of hay are —— loads of hay.

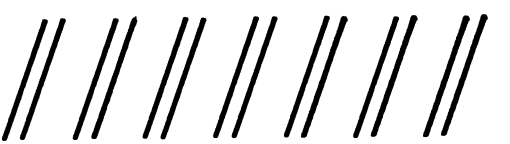
4. Two times 7 marbles are —— marbles.

5. Seven times 2 horses are —— horses.

6. Seven inches are contained in 14 inches —— times.

7. Two inches are contained in 14 inches —— times.

8. One half of 14 inches is —— inches.



9. One seventh of 14 splints is —— splints.

10. Two sevenths of 14 splints are —— splints.

11. Three sevenths of 14 splints are —— splints.

12. Four sevenths of 14 splints are —— splints.

Subtract:

a	*b*	*c*	*d*	*e*
254	264	234	294	$276\frac{1}{2}$
105	106	107	108	$102\frac{1}{4}$
f	*g*	*h*	*i*	*j*
364	354	374	384	$336\frac{3}{4}$
105	106	107	108	$102\frac{3}{4}$

1. A hen had 14 chickens; a hawk killed 6 of them; she then had —— chickens.

2. Peter lives 9 miles west of Aurora; his cousin lives 14 miles west of Aurora; from Peter's home to his cousin's it is —— miles.

3. William had 14 cents; he bought two oranges at 4 cents each; he then had —— cents.

4. Mr. Hardy paid 9 dollars for a load of coal and 5 dollars for a load of wood; the coal cost —— dollars more than the wood; and the wood and coal together cost —— dollars.

5. When lemons cost 2¢ each, for 14¢ cents I can buy —— lemons.

6. Willie paid 70 cents each for two books; for both he paid —— cents. 2 times 70 (7 tens) =

7. I paid 1 dollar and 20 cents (120¢) for 2 yards of lace; one yard cost —— cents.

8. When oil costs 14 cents a gallon, 2 quarts cost —— cents.

Multiply:

a	*b*	*c*	*d*
35 splints	45 splints	25 splints	15 splints
2	2	2	2

e	*f*	*g*	*h*
235 splints	245 splints	225 splints	115 splints
2	2	2	2

1. Draw an oblong 7 inches long and 2 inches wide. Divide it into 1-inch squares. There are —— rows of squares and in each row there are —— squares. An oblong 7 inches by 2 inches contains —— square inches.

2. Two times 7 square inches are —— square inches.

3. Seven times 2 square inches are —— square inches.

4. Draw an oblong $7\frac{1}{2}$ inches long and 2 inches wide. Divide it into 14 1-inch squares and 2 halves of 1-inch squares. The area of this oblong is —— square inches.

5. Two times $7\frac{1}{2}$ square inches are —— square inches.

6. Seven and 1 half times 2 square inches are —— square inches.

7. Fourteen is 10 and ——. 13 is 10 and ——.

8. Fourteen is 9 and ——. 14 is 8 and ——.

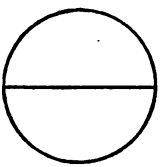
9. Fourteen is 11 and ——. 14 is 7 and ——.

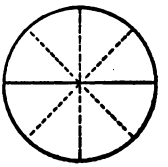
10. The perimeter of an oblong 7 inches by 2 inches is —— inches.

11. The perimeter of an oblong $7\frac{1}{2}$ inches by 2 inches is —— inches.

Divide:

a	*b*
3 splints)75 splints	4 splints)92 splints
— times	





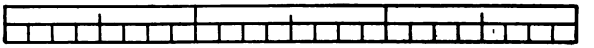
1. One whole is —— eighths.
2. One half is —— eighths.
3. One half and one eighth are —— eighths.
4. One half less one eighth is —— eighths.
5. One half and three eighths are —— eighths.
6. One half less three eighths is —— eighth.
7. One half and two eighths are —— eighths.
8. One half less two eighths is —— eighths.

9. Two times one eighth are —— eighths.
10. Two times two eighths are —— ——.

11. One eighth is contained in one half —— times.
12. One eighth is contained in one whole —— times.
13. Two eighths are contained in one half —— times.
14. One fourth of one half is —— ——.

Divide:

a	*b*	*c*
2)52 splints	3)75 splints	4)92 splints
d	*e*	*f*
5)60 splints	5)65 splints	6)72 splints



1. One half of an inch and 1 eighth of an inch are —— eighths of an inch.

2. One half of an inch and 2 eighths of an inch are —— eighths of an inch.

3. One half of an inch and 3 eighths of an inch are —— eighths of an inch.

4. One half of an inch less 1 eighth of an inch is —— eighths of an inch.

5. Three times 3 eighths of an inch are ————.

6. Two times 5 eighths of an inch are ————.

7. Three eighths of an inch are contained in one and one eighth inches (9 eighths) —— times.

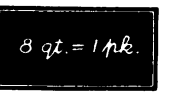
8. One fourth of one half of an inch is ——.

9. Draw a line $1\frac{1}{8}$ inches long. Draw a line 7 eighths of an inch long. The first line is how much longer than the second line?

Add:

a	*b*	*c*	*d*	*i*	*j*
137	145	168	$156\frac{1}{4}$	3	2
107	108	106	$102\frac{1}{4}$	3	1
				3	3
				3	2
e	*f*	*g*	*h*	2	2
156	177	169	$184\frac{1}{2}$	2	1
108	106	105	$103\frac{1}{4}$	2	3

1. *Eight quarts are one peck.*



2. One quart is —— —— of a peck.

3. Three quarts are —— —— of a peck.

4. Five quarts are —— —— of a peck.

5. Seven quarts are —— —— of a peck.

6. Four quarts are —— —— of a peck.

7. Two quarts are —— —— of a peck.

8. Six quarts are —— —— of a peck.

9. Twelve quarts are —— and —— —— pecks.

10. Nine quarts are —— peck and —— quart.

11. Eleven quarts are —— peck and —— quarts.

12. Fourteen quarts are —— peck and —— quarts.

13. Ten quarts are —— peck and —— quarts.

14. Thirteen quarts are —— peck and —— quarts.

15. At 10 cents a quart, one peck of beans costs —— cents.

16. At 10 cents a quart, one gallon of oil costs —— cents.

17. At 40 cents a peck, four quarts of potatoes cost —— cents.

Subtract:

a	*b*	*c*	*d*	*e*
563	454	573	634	748
205	206	207	208	$202\frac{1}{2}$

1. The sum of 30 and 3 is ——.
2. The difference of 30 and 3 is ——
3. The product of 30 and 3 is ——.
4. The quotient of 30 divided by 3 is ——.
5. The sum of two numbers is 14: one of the numbers is 8; the other number is ——.
6. The sum of two numbers is 13: one of the numbers is 9; the other number is ——.
7. The sum of two numbers is 60: one of the numbers is 40; the other number is ——.
8. The sum of two numbers is 100: one of the numbers is 80; the other number is ——.
9. One peck and one quart are —— quarts.
10. Two gallons and one quart are —— quarts.
11. Two yards and one foot are —— feet.
12. Two dimes and one cent are —— cents.
13. Two quarts and one pint are —— pints.
14. One half and three eighths are —— eighths.
15. One half and two sixths are —— sixths.

Multiply:

a	*b*	*c*	*d*	*e*
$125	$136	$147	$235	$246
2	2	2	2	2

f	*g*	*h*	*i*	*j*
$227	$345	$326	$317	$307
2	2	2	2	2

1. *Twelve months are one year.*

2. This is the 20th day of November, 1906. One month from to-day will be the 20th day of ——, 190–. Two months from to-day will be the 20th day of ——, 190–. Three months from to-day will be the 20th day of ——, 190–. One year from to-day will be the 20th day of ——, 190–.

12 mo = 1 yr.

3. Close the book and name the months in their proper order.

January
February
March
April
May
June
July
August
September
October
November
December

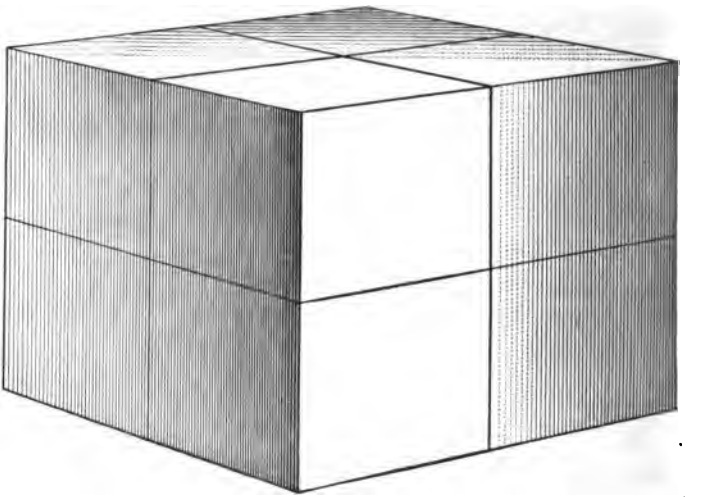
4. To-day is Tuesday. Eight days from to-day will be ——. Fourteen days from to-day will be ——.

Review Nos. 5, 6, 7, and 8, on page 49.

5. Four inches are 2 thirds of —— inches.
6. Eight squares are 2 thirds of —— squares.
7. Four balls are 2 thirds of —— balls.
8. Six apples are 2 thirds of —— apples.
9. Eight splints are 2 thirds of —— splints.

Divide:

a	*b*	*c*
$3)$72	$3)$45	$3)$672
d	*e*	*f*
$3)$645	$4)$892	$5)$565



1. *A cubic inch is a* 1*-inch cube or its equivalent.*

Review Nos. 1–4, page 50.

2. A 2-inch cube contains —— cubic inches.

3. We sometimes say that the *solid content* of a 2-inch cube is —— cubic inches.

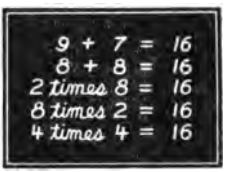
4. The area of one face of a 2-inch cube is —— square inches.

5. The perimeter of one face of a 2-inch cube is —— inches.

Divide:

a	*b*	*c*	*d*
3)$72	2)$72	6)$72	3)$672
e	*f*	*g*	*h*
3)$945	3)$642	4)$492	5)4560

1. Nine and 7 are ——.
2. Nine and 5 are ——.
3. Eight and 8 are ——.
4. Sixteen less 9 are ——.
5. Sixteen less 8 are ——.
6. Sixteen less 7 are ——.



7. 16 is —— 8's. 16 is —— 2's.
8. 16 is —— 4's. 16 is —— 5's and ——.
9. Fifteen is 1 dozen and ——.
10. Fifteen inches are 1 foot and —— inches.
11. Fifteen cents are 1 dime and —— cents.
12. Fifteen quarts are 3 gallons and —— ——.
13. Fifteen feet are —— yards.
14. Fifteen quarts are 1 peck and —— quarts.
15. Fifteen months are 1 year and —— months.
16. Fifteen days are 2 weeks and —— day.
17. Beginning with 2, add by 3's to 20.

Add:

a	*b*	*c*	*d*	*i*	*j*
209	208	209	$206\frac{1}{6}$	2	3
236	246	259	$222\frac{1}{6}$	3	1
				3	3
e	*f*	*g*	*h*	3	3
206	207	208	$204\frac{5}{6}$	3	3
245	263	232	$223\frac{1}{6}$	1	3

1. Nine boxes of berries and 7 boxes of berries are —— boxes of berries.

2. Nine rows of trees and 5 rows of trees are —— rows of trees.

3. Sixteen hills of corn less 8 hills of corn are —— hills of corn.

4. Three times 5 lemons are —— lemons.

5. Five times 3 lemons are —— lemons.

6. Two inches are contained in 16 inches —— times.

7. Eight inches are contained in 16 inches —— times.

8. One fifth of 15 splints is —— splints.

9. Two fifths of 15 splints are —— splints.

10. Three fifths of 15 splints are —— splints.

11. Four fifths of 15 splints are —— splints.

Subtract:

a	*b*	*c*	*d*	*e*
648	735	558	465	325
209	207	309	208	$102\frac{1}{4}$

f	*g*	*h*	*i*	*j*
340	431	562	273	454
105	107	109	104	$101\frac{1}{4}$

1. Clyan had 15 cents; he spent 2 fifths of his money; he then had —— cents.

2. James lives 7 miles north of the Court House; Joseph lives 9 miles south of the Court House; from James's home to Joseph's home it is —— miles.

3. At night the outdoor temperature was 9 degrees above zero; the next morning it was 7 degrees below zero; the temperature had fallen —— degrees. What was the season of the year?

4. In the morning the outdoor temperature was 80 degrees above zero; at noon it was 92 degrees above zero; the temperature had risen —— degrees. What was the season of the year?

5. 7 cents × 2. (The sign, ×, stands for the words, *multiplied by*.) 7 *cents multiplied by* 2, means, 2 *times* 7 *cents*. 2 times 7 cents are —— cents.

Multiply:

a	*b*	*c*	*d*
308 posts	205 books	306 pages	207 desks
2	3	3	2
e	*f*	*g*	*h*
103 steps	203 cents	103 hills	214 pages
6	4	5	3
i	*j*	*k*	*l*
325 books	204 posts	214 pages	301 steps
3	3	2	3

1. Imagine an oblong 5 inches long and 3 inches wide. Imagine it divided into 1-inch squares. There are —— rows of squares and in each row there are —— squares. An oblong 5 inches by 3 inches contains —— square inches.

2. Three times 5 square inches are —— square inches.

3. Five times 3 square inches are —— square inches.

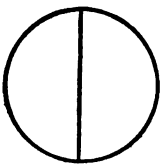
4. Draw an oblong $4\frac{1}{2}$ inches long and 3 inches wide. Divide it into 12 1-inch squares and 3 halves of 1-inch squares. The area of this oblong is —— and —— —— square inches.

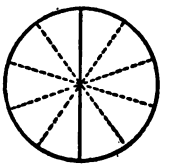
5. The perimeter of an oblong $4\frac{1}{2}$ inches by 3 inches is —— inches.

6. 12 cents ÷ 3 cents. (The sign, ÷, stands for the words, *divided by*.) 12 *cents divided by* 3 *cents*, means, *find how many times* 3 *cents are contained in* 12 *cents*. 3 cents are contained in 12 cents —— times.

Find the quotients:

a. 462 books ÷ 2 books.
b. 472 books ÷ 2 books.
c. 244 pages ÷ 2 pages.
d. 254 pages ÷ 2 pages.
e. 336 cents ÷ 3 cents.
f. 342 cents ÷ 3 cents.
g. 550 sheep ÷ 5 sheep.
h. 560 sheep ÷ 5 sheep.
i. 480 cards ÷ 4 cards.
j. 452 cards ÷ 4 cards.
k. 606 trees ÷ 6 trees.
l. 672 trees ÷ 6 trees.





1. One whole is —— tenths.
2. One half is —— tenths.
3. One half and three tenths are —— tenths.
4. One half and two tenths are —— tenths.
5. One half less three tenths is —— tenths.
6. Two times three tenths are —— tenths.
7. Four times two tenths are —— tenths.
8. Three times five tenths are —— ——.
9. One tenth is contained in one half —— times.
10. One fifth of one half is —— ——.
11. 12 cents ÷ 3. (The sign, ÷, stands for the words, *divided by*.) 12 *cents divided by* 3, means, *find one third of* 12 *cents*. One third of 12 cents is —— cents.

Find the quotients:

a. 464 books ÷ 2
b. 462 books ÷ 2
c. 264 books ÷ 2
d. 256 pages ÷ 2
e. 366 cents ÷ 3
f. 372 cents ÷ 2
g. 550 sheep ÷ 5
h. 560 sheep ÷ 5
i. 440 cords ÷ 4
j. 492 cords ÷ 4
k. 606 trees ÷ 6
l. 672 trees ÷ 6

1. One dime is one tenth of a dollar.

2. One half of a dollar is —— tenths of a dollar.

3. One half of a dollar and one tenth of a dollar are —— tenths of a dollar.

4. One half of a dollar and three tenths of a dollar are —— tenths of a dollar.

5. One half of a dollar less one tenth of a dollar is —— tenths of a dollar.

6. One half of a dollar less three tenths of a dollar is —— tenths of a dollar.

7. Three times three tenths of a dollar are —— tenths of a dollar.

8. Four times three tenths of a dollar are —— tenths dollars, or one and —— tenths dollars.

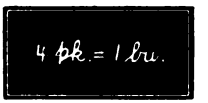
9. Two tenths of a dollar are contained in one dollar —— times.

10. One tenth of a dollar is contained in one half of a dollar —— times.

Find the sums:

a	*b*	*c*	*d*	*i*	*j*
260	270	250	$280\frac{1}{8}$	3	23
240	232	254	$221\frac{1}{8}$	2	13
				3	32
				2	21
e	*f*	*g*	*h*	3	10
394	443	353	$465\frac{1}{8}$	2	23
210	260	450	$440\frac{7}{8}$	3	30

1. *Four pecks are one bushel.*



2. One peck is —— —— of a bushel.

3. Three pecks are —— —— of a bushel.

4. Two pecks are —— —— of a bushel.

5. Six pecks are —— and —— —— bushels.

Review page 27.

6. Five quarts are —— —— of a peck.

7. Five pecks are —— bushel and —— peck.

8. Nine quarts are —— peck and —— quart.

9. Nine pecks are —— bushels and —— peck.

10. Ten quarts are —— peck and —— quarts.

11. Ten pecks are —— bushels and —— pecks.

12. At 20 cents a peck, one bushel of potatoes costs —— cents.

13. At 25 cents a peck, one bushel of onions costs ——.

14. At 80 cents a bushel, one peck of peas costs —— cents.

Find the differences:

a	*b*	*c*	*d*	*e*
542	353	674	765	436
216	117	217	318	$213\frac{5}{6}$

f	*g*	*h*	*i*	*j*
562	473	584	875	457
317	219	318	617	$112\frac{5}{6}$

1. The sum of 60 and 3 is ——.
2. The difference of 60 and 3 is ——.
3. The product of 60 and 3 is ——.
4. The quotient of 60 divided by 3 is ——.

Review Nos. 5, 6, 7, and 8, on pages 48 and 58.

5. The difference of two numbers is 3: the larger number is 12; the smaller number is ——.
6. The difference of two numbers is 5: the larger number is 15; the smaller number is ——.
7. The difference of two numbers is 2: the smaller number is 10; the larger number is ——.
8. The difference of two numbers is 4: the smaller number is 8; the larger number is ——.
9. One bushel and 2 pecks are —— pecks.
10. One peck and 2 quarts are —— quarts.
11. One yard and 2 feet are —— feet.
12. One gallon and 2 quarts are —— quarts.
13. One year and 2 months are —— months.
14. One week and 2 days are —— days.
15. 8 balls × 2. (8 balls multiplied by 2.) This means 2 *times* 8 *balls*. 2 times 8 balls are ——.

Find the products:

a. 305 dollars × 2	*f.* 247 quarts × 2
b. 325 dollars × 2	*g.* 103 bushels × 5
c. 204 splints × 3	*h.* 113 bushels × 5
d. 224 splints × 3	*i.* 203 yards × 4
e. 207 quarts × 2	*j.* 223 yards × 4

Thirty days hath September, April, June, and November. Each of the other months except February has 31 days. February has 29 days in a leap year and 28 days in each of the other years.

1. From January 1st to February 1st it is —— days.

2. If February has 28 days, from February 1st to March 1st it is —— days.

3. From March 1st to April 1st it is —— days.

4. To-day is Friday. Seven days from to-day will be ——. Nine days from to-day will be ——.

Review Nos. 5–8, page 49, and Nos. 5–9, page 59.

5. Two thirds of 6 balls are —— balls.

6. Six balls are two thirds of —— balls.

7. Two thirds of 12 splints are —— splints.

8. Twelve splints are two thirds of —— splints.

9. 12 dollars ÷ 4 dollars. (12 dollars divided by 4 dollars.) This means, *find how many times* 4 *dollars are contained in* 12 *dollars*. 4 dollars are contained in 12 dollars —— times.

Find the quotients:

a. 550 dollars ÷ 5 dollars.
b. 560 dollars ÷ 5 dollars.
c. 360 crayons ÷ 3 crayons.
d. 375 crayons ÷ 3 crayons.
e. 480 qt. ÷ 4 qt.
f. 492 qt. ÷ 4 qt.
g. 640 bu. ÷ 2 bu.
h. 652 bu. ÷ 2 bu.

Review Nos. 1–4, page 50, and Nos. 1–5, page 60.

1. A 1-inch cube equals what part of a 2-inch cube?

2. A 2-inch cube is how many times as large as a 1-inch cube?

3. One half of a 2-inch cube equals how many 1-inch cubes?

4. The area of one face of a 2-inch cube is how many times the area of one face of a 1-inch cube?

5. The solid content of a 2-inch cube is how many times the solid content of a 1-inch cube?

Review Nos. 5–8, page 50.

6. One half of 15 is —— ——. 2 is contained in 15 —— —— times.

7. One third of 7 is —— ——. 3 is contained in 7 —— —— times.

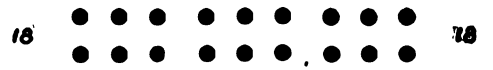
8. One third of 10 is —— ——. 3 is contained in 10 —— —— times.

9. One third of 13 is —— ——. 3 is contained in 13 —— —— times.

10. 12 dollars ÷ 4. (12 dollars divided by 4.) This means, *find* 1 *fourth of* 12 *dollars*. One fourth of 12 dollars is —— dollars.

Find the quotients:

a. 550 dollars ÷ 5	*e.* 330 crayons ÷ 3
b. 560 dollars ÷ 5	*f.* 345 crayons ÷ 3
c. 480 quarts ÷ 4	*g.* 840 people ÷ 2
d. 452 quarts ÷ 4	*h.* 850 people ÷ 2



1. Nine and 6 are ——.
2. Nine and 9 are ——.
3. Eight and 7 are ——.
4. Fifteen less 9 are ——.
5. Fifteen less 6 are ——.
6. Fourteen less 9 are ——.

7. 18 is —— 9's. 18 is —— 2's.
8. 18 is —— 6's. 18 is —— 3's.
9. Sixteen is 1 dozen and ——.
10. Sixteen inches are 1 foot and —— inches.
11. Sixteen cents are 1 dime and —— cents.
12. Sixteen pints are —— quarts.
13. Sixteen feet are —— yards and —— foot.
14. Sixteen quarts are —— gallons.
15. Sixteen days are —— weeks and —— days.
16. Sixteen pecks are —— bushels.
17. Beginning with 4, add by 4's to 32. Do this every day for a week.

Find the sums:

a	*b*	*c*	*d*	*i*	*j*
209	208	319	$424\frac{2}{10}$	4	4
237	318	217	$124\frac{3}{10}$	4	3
				4	1
e	*f*	*g*	*h*	4	2
318	329	417	$247\frac{4}{10}$	4	3
228	247	227	$129\frac{6}{10}$	4	3

1. Nine bushels of potatoes and 6 bushels of potatoes are —— bushels of potatoes.

2. Eight loads of coal and 7 loads of coal are —— loads of coal.

3. Fifteen gallons of milk less 9 gallons of milk are —— gallons of milk.

4. Fifteen spans of ponies less 8 spans of ponies are —— spans of ponies.

5. Two times 9 oranges are —— oranges.

6. Four times 4 horses are —— horses.

7. Two inches are contained in 1 foot 6 inches (18 inches) —— times. 1 foot 6 inches ÷ 2 inches = ?

8. Four inches are contained in 1 foot 4 inches —— times. 1 foot 4 inches ÷ 4 inches = ?

9. Five inches are contained in 16 inches —— times with a remainder of —— inch.

10. One half of 16 inches is —— inches.

11. One fourth of 16 inches is —— inches.

12. One eighth of 16 inches is —— inches.

13. Three eighths of 16 inches are —— inches.

14. Five eighths of 16 inches are —— inches.

Find the differences:

a	*b*	*c*	*d*	*e*
746	636	566	488	818
128	229	327	179	$203\frac{7}{10}$

f	*g*	*h*	*i*	*j*
576	756	486	998	257
568	27	59	159	$124\frac{1}{10}$

1. Amos had 16 cents; he spent 3 fourths of his money; he then had —— cents.

2. Hattie lives 6 miles south of Aurora; Elsie lives 9 miles south of Hattie's home; from Aurora to Elsie's home it is —— miles.

3. Harry had 18 cents; he bought 2 oranges at 4 cents each; he then had —— cents.

4. When the top of a mercury column in a thermometer is at 32 degrees above zero, water will begin to freeze. Thirty-two degrees above zero is called "*the freezing point.*" When the top of the mercury column is at 40 degrees above zero, it is —— degrees above the freezing point. When the mercury column is 26 degrees above zero, it is —— degrees below the freezing point.

5. 9 cents × 2. (9 cents multiplied by 2.) This means, 2 *times* 9 *cents.* 2 times 9 cents are —— cents.

Find the products:

a. 482 dollars × 2
b. 273 dollars × 2
c. 262 dollars × 3
d. 253 dollars × 3
e. 240 dollars × 4
f. 130 dollars × 5
g. 131 dollars × 5
h. 250 dollars × 3
i. 204 dollars × 3

For Study

2 times 1 = 2
2 times 2 = 4
2 times 3 = 6
2 times 4 = 8
2 times 5 = 10
2 times 6 = 12
2 times 7 = 14
2 times 8 = 16
2 times 9 = 18

Review pages 24 and 34.

1. Imagine an oblong 3 inches by $1\frac{1}{2}$ inches. Imagine it divided into 3 1-inch squares and 3 halves of one-inch squares.

The area of the oblong is —— square inches.

The perimeter of the oblong is —— inches.

2. The area of a 2-inch square is —— square inches.

The perimeter of a 2-inch square is —— inches.

3. The area of a 3-inch square is —— square inches.

The perimeter of a 3-inch square is —— inches.

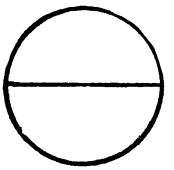
4. The area of a 4-inch square is —— square inches.

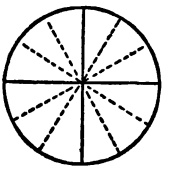
5. The perimeter of a 4-inch square is —— inches.

6. 16 cents ÷ 4 cents. (16 cents divided by 4 cents.) This means, *find how many times* 4 *cents are contained in* 16 *cents*. 4 cents are contained in 16 cents —— times.

Find the quotients :

a.	100 dollars ÷ 2 dollars.	*g.*	$700 ÷ $2.
b.	120 dollars ÷ 2 dollars.	*h.*	$780 ÷ $2.
c.	300 dollars ÷ 2 dollars.	*i.*	$900 ÷ $2.
d.	340 dollars ÷ 2 dollars.	*j.*	$920 ÷ $2.
e.	500 dollars ÷ 2 dollars.	*k.*	$720 ÷ $3.
f.	560 dollars ÷ 2 dollars.	*l.*	$750 ÷ $3.





1. One whole is —— twelfths.
2. One half is —— twelfths.
3. One half and 1 twelfth are —— twelfths.
4. One half and 5 twelfths are —— twelfths.
5. One half and 2 twelfths are —— twelfths.
6. One half and 4 twelfths are —— twelfths.

7. One half less 1 twelfth is —— twelfths.
8. One half less 4 twelfths is —— twelfths.
9. One half less 3 twelfths is —— twelfths.

10. Two times 5 twelfths are —— twelfths.

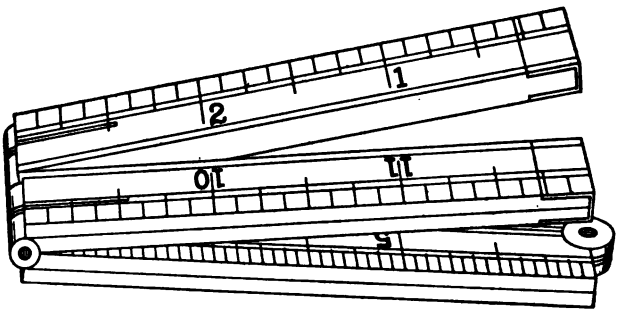
11. Two twelfths are contained in 1 half —— times.

12. One sixth of one half is —— ——.

13. 16 cents ÷ 4. (16 cents divided by 4.) This means, *find* 1 *fourth of* 16 *cents.* 1 fourth of 16 cents is ——.

Find the quotients:

a. 100 dollars ÷ 2
b. 140 dollars ÷ 2
c. 500 dollars ÷ 2
d. 580 dollars ÷ 2
e. 300 dollars ÷ 2
f. 700 dollars ÷ 2
g. 740 dollars ÷ 2
h. 900 dollars ÷ 2
i. 920 dollars ÷ 2
j. 420 dollars ÷ 3



1. *One inch is one twelfth of a foot.*

2. One half of a foot is —— twelfths of a foot.

3. One half of a foot and 1 twelfth of a foot are —— twelfths of a foot.

4. One half of a foot less 1 twelfth of a foot is —— twelfths of a foot.

5. Six times 1 twelfth of a foot are —— ——.

6. One twelfth of a foot is contained in 1 half of a foot —— times.

7. One half of a foot and 5 twelfths of a foot are —— twelfths of a foot.

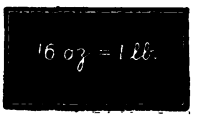
Find the sums:

a	*b*	*c*	*d*	*i*	*j*
270	370	180	$260\frac{1}{12}$	4	24
290	280	280	$390\frac{3}{12}$	4	12
				1	23
				2	32
e	*f*	*g*	*h*	3	21
372	273	185	$267\frac{7}{12}$	4	11
291	382	383	$391\frac{5}{12}$	4	24

1. *One pound is* —— *ounces.*

2. One half-pound is —— ounces.

3. One fourth-pound is —— ounces.



4. Three fourths of a pound are —— ounces.

5. How many ounces does your book weigh? Is that more or less than 1 pound?

6. How many ounces does your knife weigh? Is that more or less than 1 fourth of a pound?

7. The biggest apple you ever saw weighed how many ounces?

8. A pint of water weighs how much?

9. A quart of water weighs how much?

10. A gallon of water weighs how much?

11. At 16 cents a pound $\frac{1}{2}$ pound of walnuts costs —— cents.

12. At 10 cents a pound, $1\frac{1}{2}$ pounds of grapes cost —— cents.

13. I weigh —— pounds. My dog weighs —— pounds. The teacher weighs —— pounds.

Find the differences:

a	*b*	*c*	*d*
138 lb.	156 lb.	187 lb.	$149\frac{1}{2}$ lb.
75 lb.	84 lb.	93 lb.	$83\frac{1}{4}$ lb.

e	*f*	*g*	*h*
273 lb.	254 lb.	385 lb.	$548\frac{1}{2}$ lb.
74 lb.	83 lb.	92 lb.	$82\frac{1}{8}$ lb.

1. The sum of 40 and 4 is ——.
2. The difference of 40 and 4 is ——.
3. The product of 40 and 4 is ——.
4. The quotient of 40 divided by 4 is ——.

Review Nos. 5, 6, 7, and 8, on pages 48, 58, and 68.

5. The difference of two numbers is 10: the larger number is 60; the smaller number is ——.
6. The difference of two numbers is 10: the smaller number is 70; the larger number is ——.
7. The difference of two numbers is 5: the smaller number is 10; the larger number is ——.
8. The difference of two numbers is 5: the larger number is 30; the smaller number is ——.
9. One bushel less 1 peck is —— pecks.
10. One pound less 1 ounce is —— ounces.
11. One yard less 1 foot is —— feet.
12. One gallon less 1 quart is —— quarts.
13. One foot less 1 inch is —— inches.
14. 6 pounds × 3. (6 pounds multiplied by 3.) This means, 3 *times* 6 *pounds*. 3 times 6 pounds are —— pounds.

Find the products:

a. 32 lb. × 4	*e.* 60 lb. × 3	*i.* 56 lb. × $3\frac{1}{2}$
b. 32 lb. × 5	*f.* 60 lb. × $2\frac{1}{2}$ *	*j.* 32 lb. × 2
c. 32 lb. × 6	*g.* 56 lb. × 2	*k.* 32 lb. × 3
d. 60 lb. × 2	*h.* 56 lb. × 3	*l.* 32 lb. × $2\frac{1}{2}$

* This means, 2 *times* 60 *lb. plus* 1 *half of* 60 *lb.*

1. From April 1st to May 1st it is —— days. From April 10th to May 10th it is —— days.

2. From May 1st to June 1st it is —— days. From May 20th to June 20th it is —— days.

3. From June 1st to July 1st it is —— days. From June 12th to July 12th it is —— days.

4. To-day is Monday. Nine days from to-day will be ——.

5. One half of 7 inches is —— inches.

6. Seven inches are 1 half of —— inches.

7. One third of 6 inches is —— inches.

8. Six inches are 1 third of —— inches.

9. Two thirds of 6 inches are —— inches.

10. Six inches are 2 thirds of —— inches.

11. 15 pounds ÷ 3 pounds. (15 pounds divided by 3 pounds.) This means, *find how many times* 3 *pounds are contained in* 15 *pounds.* 3 lb. are contained in 15 lb. —— times.

Find the quotients:

a. 140 lb. ÷ 2 lb.
b. 150 lb. ÷ 2 lb.
c. 156 lb. ÷ 2 lb.
d. 340 lb. ÷ 2 lb.
e. 440 lb. ÷ 2 lb.
f. 430 lb. ÷ 2 lb.
g. 436 lb ÷ 2 lb.
h. 680 lb. ÷ 2 lb.

1. Nine dollars and 8 dollars are —— dollars.

2. Seventeen dollars less 9 dollars? 17 less 8?

3. Three times 7 dollars? 7 times 3 dollars?

4. Five inches are contained in 1 ft. 8 in. —— times.

5. Seven inches are contained in 1 ft. 9 in. —— times.

6. One fifth of 20 inches is —— inches.

7. Two fifths of 20 inches are —— inches.

8. Three fifths of 20 inches are —— inches.

9. There were 20 trees in a garden; one fourth of them were apple trees, one fifth of them were pear trees, and the remainder were peach trees. There were —— apple trees, —— pear trees, and —— peach trees.

10. Two thirds of the trees in a park were maples; the remainder were oaks. There were 14 maple trees. There were —— oak trees. There were —— trees in the park. If the trees were in three equal rows, how many were there in each row?

Find the differences:

a	*b*	*c*	*d*
239 lb.	376 lb.	$476\frac{1}{2}$ lb.	$548\frac{1}{2}$ lb.
84 lb.	92 lb.	124 lb.	$214\frac{1}{2}$ lb.

e	*f*	*g*	*h*
364 lb.	457 lb.	$385\frac{1}{2}$ lb.	$468\frac{1}{2}$ lb.
92 lb.	82 lb.	$123\frac{1}{4}$ lb.	$132\frac{1}{4}$ lb.

1. Sarah had 20 cents; she spent 3 fourths of her money; she then had —— cents.

2. Ellen lives $2\frac{1}{2}$ miles north of the depot; Jane lives $2\frac{1}{2}$ miles south of the depot; from Ellen's home to Jane's home it is —— miles. $2\frac{1}{2} + 2\frac{1}{2} = ?$

3. One morning the mercury stood at 28 degrees above zero. Was it above or below the freezing point? how many degrees?

4. Seventy is —— tens. 60 is —— tens.

140 is —— tens, or —— hundred and —— tens.
160 is —— tens, or —— hundred and —— tens.
210 is —— tens, or —— hundred and —— tens.
180 is —— tens, or —— hundred and —— tens.
190 is —— tens, or —— hundred and —— tens.

5. Three times 60 (6 tens) are ——.

6. Three times 70 (7 tens) are ——.

7. 7 days × 3. (7 days multiplied by 3.) This means, 3 *times* 7 *days*. 3 times 7 days are —— days.

Find the products:

a. 31 days × 2	*h.* 70 ft. × $3\frac{1}{2}$*
b. 31 days × 3	*i.* 170 ft. × 2
c. 31 days × 4	*j.* 173 ft. × 2
d. 31 days × 5	*k.* 260 ft. × $2\frac{1}{2}$
e. 31 days × 6	*l.* 160 ft. × 2
f. 31 days × 7	*m.* 163 ft. × 3
g. 70 feet × 2	*n.* 260 ft. × $3\frac{1}{2}$

* This means, 3 *times* 70 *feet plus* 1 *half of* 70 *feet.*

1. Imagine an oblong 7 inches by 3 inches. Imagine it divided into 1-inch squares. There are —— rows of squares and in each row there are —— squares. The area of this oblong is —— square inches.

Three times 7 square inches are —— square inches.

Seven times 3 square inches are —— square inches.

2. James drew an oblong on his slate. It contained 10 square inches. It was 5 inches long. It was —— inches wide.

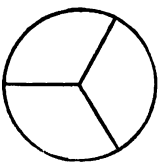
3. I am thinking of an oblong whose area is 12 square inches. It is 6 inches long. It is —— inches wide.

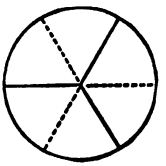
4. I am thinking of an oblong whose area is 15 square inches. It is 5 inches long. It is —— inches wide.

5. 21 trees ÷ 7 trees. (21 trees divided by 7 trees.) This means, *find how many times* 7 *trees are contained in* 21 *trees*. 7 trees are contained in 21 trees —— times.

Find the quotients:

a. 140 trees ÷ 7 trees
b. 210 trees ÷ 7 trees
c. 147 trees ÷ 7 trees
d. 217 trees ÷ 7 trees
e. 84 trees ÷ 7 trees
f. 224 trees ÷ 7 trees
g. 154 trees ÷ 7 trees
h. 161 trees ÷ 7 trees
i. 231 trees ÷ 7 trees
j. 165 trees ÷ 5 trees

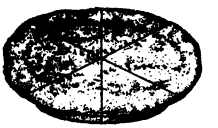




1. One whole is —— thirds.
2. One whole is —— sixths.
3. One third is —— sixths.
4. Two thirds are —— sixths.
5. One third and 1 sixth are —— sixths.
6. Two thirds and 1 sixth are —— sixths.
7. One third less 1 sixth is —— sixth.
8. Two thirds less 1 sixth are —— sixths.
9. Two times 2 sixths are ———.
10. Three times 2 sixths are ———.
11. Two sixths are contained in 1 whole —— times.
12. One sixth is contained in 2 wholes —— times.
13. One half of 1 third is —— ——.
14. 21 trees ÷ 7. (21 trees divided by 7.) This means, *find* 1 *seventh of* 21 *trees*. One seventh of 21 trees is —— trees.

Find the quotients:

a. 154 trees ÷ 7
b. 224 trees ÷ 7
c. 161 trees ÷ 7
d. 77 trees ÷ 7
e. 84 trees ÷ 7
f. 714 trees ÷ 7



1. Harry had a whole pie; he ate 1 third of it for his lunch and 1 sixth of it at dinner time; he then had —— —— of a pie.

2. Sarah had 1 third of a pie; she gave 1 sixth of a pie to her little brother; she then had —— —— of a pie.

3. Mrs. Smith's boarders ate $2\frac{1}{3}$ pies at dinner time and $2\frac{1}{6}$ pies at supper; in all they ate ————.

4. Hattie divided $2\frac{1}{3}$ pies among her playmates, giving to each $\frac{1}{3}$ of a pie; she had —— playmates.

5. If I should divide $\frac{1}{2}$ of a pie equally among 3 children, each child would receive —— of a pie.

6. If I should divide $\frac{1}{2}$ of a pie equally between two children, each child would receive ————.

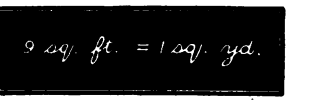
7. *For Drill in Adding*

9	9	8	7
4	6	8	6
9	7	9	8
9	7	7	6
8	8	9	9
5	7	5	8

Review and drill until pupils can give the sums in any order in 12 seconds. It provides an excellent exercise to put the figures found in this table upon 12 cards, two figures on each card, and allow the pupils to handle the cards and name the sums as rapidly as possible.

Make a pendulum 39 inches long and see how many pupils can recite these sums while it vibrates 12 times.

1. Draw upon the blackboard a 1-yard square. Divide it into 1-foot squares.



A 1-yard square is equal to 9 1-foot squares.

2. The perimeter of a 1-yard square is —— yards, or —— feet.

3. The area of a 1-yard square is —— square feet.

4. 6 + 2, means, 6 *and* 2; 6 and 2 are ——.

5. 6 − 2, means, 6 *less* 2; 6 less 2 are ——.

6. 6 inches × 2, means, 2 *times* 6 *inches;* 2 times 6 inches are —— inches.

7. 6 inches ÷ 2 inches means, *find how many times 2 inches are contained in 6 inches;* 2 inches are contained in 6 inches —— times.

8. 6 inches ÷ 2, means, *find one half of 6 inches;* one half of 6 inches is —— inches.

9. 12¢ + 3¢, means ——. 12¢ − 3¢, means ——.

10. 12¢ × 3¢ is *nonsense.* 12¢ × 3, means ——.

11. 12¢ ÷ 3¢, means ——. 12¢ ÷ 3, means ——.

12. *For Drill in Subtracting*

13 less 9 =	18 less 9 =	13 less 8 =
15 less 9 =	14 less 7 =	15 less 8 =
16 less 8 =	17 less 9 =	14 less 9 =
13 less 7 =	14 less 8 =	17 less 9 =
13 less 4 =	13 less 5 =	15 less 6 =
15 less 7 =	16 less 7 =	14 less 5 =

1. The sum of 21 and 3 is ——.
2. The difference of 21 and 3 is ——.
3. The product of 21 and 3 is ——.
4. The quotient of 21 divided by 3 is ——.

Review Nos. 5, 6, 7, and 8, on pages 48, 58, 68, 78.

5. The sum of two numbers is 30: one of the numbers is 10; the other number is ——.
6. The difference of two numbers is 6: the larger number is 11; the smaller number is ——.
7. The difference of two numbers is 6: the smaller number is 11; the larger number is ——.
8. One pound less 2 ounces is —— ounces.
9. One gallon less 2 quarts is —— quarts.
10. One foot less 2 inches is —— inches.
11. One week less 2 days is —— days.
12. One sq. yd. less 2 sq. ft. is —— square feet.

Find the products:

a.	6 sq. ft. × 3 =	*i.*	17 ft. × 4
b.	26 sq. ft. × 3 =	*j.*	34 ft. × 4
c.	36 sq. ft. × 3 =	*k.*	25 ft. × 4
d.	46 sq. ft. × 3 =	*l.*	23 ft. × 4
e.	56 sq. ft. × 3 =	*m.*	14 ft. × 4
f.	66 sq. ft. × 3 =	*n.*	22 ft. × 4
g.	76 sq. ft. × 3 =	*o.*	32 ft. × 4
h.	206 sq. ft. × 3 =	*p.*	24 ft. × 4

1. From July 1st to August 1st it is —— days. From July 5th to August 5th it is —— days.

2. From August 1st to September 1st it is —— days. From A September 15th it is —— days.

3. From September 1st to Octo —— days. From September 12th to it is —— days.

4. One third of 7 inches is ——

5. Seven inches are 1 third of —

6. Two thirds of 12 inches are —

7. Twelve inches are 2 thirds of

8. One third of 15 inches is ——

9. Two thirds of 15 inches are —

10. Fourteen inches are 2 thirds o

11. One half of 42 cents is —— c

12. Forty-two cents are one half o

13. $120 \div 20$. This may be thoug ing, *find how many times* 2 *tens are* o *tens*. 2 tens are contained in 12 tens

$2\emptyset \overline{)12\emptyset}$

Find the quotients:

a. $160 \div 20 =$		*e.* 1
b. $240 \div 20 =$		*f.* 8
c. $180 \div 30 =$		*g.* 2
d. $360 \div 30 =$		*h.* 2

Review pages 70 and 80.

1. Think of a block that is 3 inches long, 3 inches wide, and 1 inch thick. Make such a block; or make a paper box that would exactly contain such a block. The block is a right prism. Imagine it divided into 1-inch cubes. There are —— rows of 1-inch cubes and —— cubes in each row. The solid content of this block is —— cubic inches. Three times 3 cubic inches are —— cubic inches.

2. One fifth of 11 is———; 5 is contained in 11 ——— times.

3. One fifth of 16 is———; 5 is contained in 16 ——— times.

4. One fifth of 21 is———; 5 is contained in 21 ——— times.

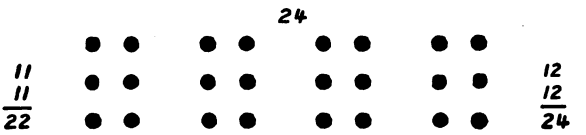
5. One sixth of 13 is———; 6 is contained in 13 ——— times.

6. One sixth of 19 is———; 6 is contained in 19 ——— times.

7. 19 feet ÷ 2. (19 feet divided by 2.) This means, *find* 1 *half of* 19 *feet*. One half of 19 feet is —— feet.

Find the quotients:

	a. 245 ft. ÷ 2	*f*. 233 ft. ÷ 2
	b. 463 ft. ÷ 2	*g*. 453 ft. ÷ 2
2)427 ft.	*c*. 672 ft. ÷ 2	*h*. 435 ft. ÷ 2
$213\frac{1}{2}$ ft.	*d*. 849 ft. ÷ 2	*i*. 436 ft. ÷ 2
	e. 461 ft. ÷ 2	*j*. 854 ft. ÷ 2



1. Twenty-five is —— 8's and ——.

2. Twenty-five is —— 3's and ——.

3. Twenty-five is —— 6's and ——.

3 times 8 = 24
8 times 3 = 24
4 times 6 = 24
6 times 4 = 24

4. Twenty-two days are —— weeks and —— day.

5. Twenty-three months are —— year and —— months.

6. Twenty-three (23) is —— tens and —— units.

7. Twenty-four feet are —— yards.

8. Twenty-four tenths are —— and —— tenths.

9. Beginning with 2, add by 4's to 38. Can you do this in 5 seconds?

Find the sums:

a	*b*	*c*	*d*	*i*	*j*
317	234	235	$534\frac{1}{2}$	2	14
246	128	219	$212\frac{1}{10}$	4	$21\frac{1}{4}$
				4	32
e	*f*	*g*	*k*	4	$12\frac{1}{4}$
263	380	294	$352\frac{1}{2}$	4	21
251	145	232	$296\frac{1}{12}$	4	$33\frac{1}{2}$

1. Nine pairs of boots are —— boots.
2. Three spiders have —— legs.
3. Three house flies have —— legs.
4. Five butterflies have —— wings.
5. Six butterflies have —— wings.
6. Eight yards are —— feet.
7. Eight 2-cent stamps cost —— cents.
8. Eight 3-cent stamps cost —— cents.

9. A cat has —— toes on each front foot and —— toes on each hind foot. A cat has —— toes.

10. A boy wears 2 shoes. A horse wears 4 shoes. An ox wears 8 shoes. Three boys need —— shoes. Three horses need —— shoes. Three oxen need —— shoes.

11. There were 24 trees in a garden; one third of them were apple trees; one fourth of them were pear trees, and the remainder were peach trees. There were —— apple trees, —— pear trees, and —— peach trees.

Find the differences:

a	*b*	*c*	*d*
348 bu.	269 bu.	$364\frac{1}{2}$ bu.	487 bu.
93 bu.	84 bu.	$121\frac{1}{2}$ bu.	$132\frac{1}{2}$ bu.

e	*f*	*g*	*h*
536 bu.	458 bu.	$436\frac{1}{2}$ bu.	524 bu.
182 bu.	193 bu.	$112\frac{1}{4}$ bu.	$212\frac{1}{4}$ bu.

1. James had 24 cents; he spent 3 fourths of his money; he then had —— cents.

2. Alice lives $5\frac{1}{2}$ miles west of the church; Susan lives $8\frac{1}{2}$ miles west of the same church. How far is it from Alice's home to Susan's home?

3. Amos bought 3 melons at 8¢ each; he gave the salesman 3 dimes. How much change should he receive?

3 times 8 = ? $\qquad$ 24 + ? = 30

4. What is the outdoor temperature now, in the shade? How many degrees above (or below) the freezing point?

5. Seven hundred is —— tens. 600 is —— tens, 860 is —— tens, 740 is —— tens, 530 is —— tens, 370 is —— tens.

6. 834 is 8 hundred, 3 tens, and 4 units.
946 is — hundred, — tens, and — units.
735 is — hundred, — tens, and — units.

7. Three times 80 (8 tens) are ——.

8. Four times 60 (6 tens) are ——.

9. \$8 × 3. (\$8 multiplied by 3.) This means, 3 *times* \$8. 3 times \$8 are ——.

Find the products:

a. \$ 84 × 2	*f.* \$ 82 × $2\frac{1}{2}$	*k.* \$272 × 3
b. \$284 × 2	*g.* \$ 73 × 2	*l.* \$ 42 × $2\frac{1}{2}$
c. \$ 80 × $2\frac{1}{2}$	*h.* \$273 × 2	*m.* \$ 63 × 3
d. \$ 82 × 3	*i.* \$ 64 × $2\frac{1}{2}$	*n.* \$263 × 3
e. \$282 × 3	*j.* \$ 72 × 3	*o.* \$ 84 × $2\frac{1}{2}$

1. Imagine an oblong 6 feet by 3 feet. Imagine it divided into —— 1-foot squares. The area of this oblong is —— square feet. 3 times 6 square feet are —— square feet. 18 square feet are equal to —— square yards.

2. The perimeter of the oblong described in No. 1 is —— feet.

3. Peter drew an oblong on his slate. It contained 21 square inches. It was 7 inches long. It was —— inches wide. The perimeter of the oblong was —— inches.

4. The product of two numbers is 21: one of the numbers is 7; the other number is ——.

5. The product of two numbers is 24: one of the numbers is 4; the other number is ——.

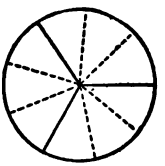
6. Mr. Williams bought some sheep at 3 dollars each; he paid 24 dollars; there were —— sheep.

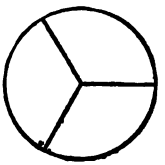
7. When 2 oranges cost 8¢, 3 oranges cost —— cents.

8. $24 ÷ $6. (24 dollars divided by 6 dollars.) This means, *find how many times* 6 *dollars are contained in* 24 *dollars.* 6 dollars are contained in 24 dollars —— times.

Find the quotients:

a. $ 18 ÷ $ 6	*e.* $180 ÷ $ 9	*i.* $200 ÷ $50
b. $180 ÷ $ 6	*f.* $180 ÷ $90	*j.* $ 20 ÷ $ 4
c. $180 ÷ $60	*g.* $ 20 ÷ $ 5	*k.* $200 ÷ $ 4
d. $ 18 ÷ $ 9	*h.* $200 ÷ $ 5	*l.* $200 ÷ $40





1. One whole is —— ninths.
2. One third is —— ninths.
3. Two thirds are —— ninths.
4. One third and 1 ninth are —— ninths.
5. One third less 1 ninth is —— ninths.
6. Two thirds and 1 ninth are —— ninths.
7. Two thirds less 1 ninth are —— ninths.
8. Four times 2 ninths are —— ninths.
9. Three times 2 ninths are —— ninths.
10. Two ninths are contained in 8 ninths —— times.
11. Two ninths are contained in $1\frac{1}{9}$ —— times.
12. One half of 1 third is —— ——.
13. One third of 1 third is —— ——.
14. 19 feet ÷ 3. (19 feet divided by 3.) This means, *find* 1 *third of* 19 *feet.* 1 third of 19 feet is —— feet.

Find the quotients:

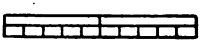
	a. 637 ft. ÷ 3	*e.* 937 ft. ÷ 3
3)367 ft.	*b.* 334 ft. ÷ 3	*f.* 934 ft. ÷ 3
$122\frac{1}{3}$ ft.	*c.* 394 ft. ÷ 3	*g.* 373 ft. ÷ 3
	d. 397 ft. ÷ 3	*h.* 343 ft. ÷ 3

There are two ways to write tenths in figures. Three tenths may be written $\frac{3}{10}$ or .3. 1 and 2 tenths may be written $1\frac{2}{10}$ or 1.2. When the period is used in writing numbers, it is called *a point, or a* **decimal point.**

Write in figures, using the decimal point:

a. 4 tenths, 14 tenths, 9 tenths, 11 tenths, 15 tenths, 25 tenths, 6 tenths, 1 and 4 tenths, 2 and 3 tenths.

1. Read the following in two ways: 1.6, 2.7, 4.5.



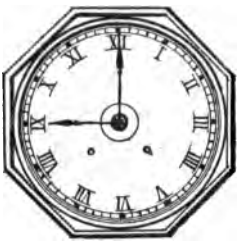
Sometimes inches are divided into tenths. Perhaps the teacher can show you a rule so divided.

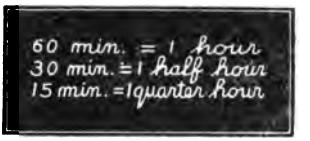
2. $\frac{1}{2}$ of an inch + $\frac{1}{10}$ of an inch = .5 + .1 =
3. $\frac{1}{2}$ of an inch − $\frac{1}{10}$ of an inch = .5 − .1 =
4. $4\frac{3}{10}$ inches + $2\frac{1}{10}$ inches = 4.3 + 2.1 =
5. $5\frac{7}{10}$ inches − $2\frac{3}{10}$ inches = 5.7 − 2.3 =
6. 3 times .5 of an inch are ————.
7. Beginning with 3, add by 4's to 39.

Find the sums:

b	*c*	*d*	*h*	*i*
24.3 in.	$24\frac{3}{10}$ in.	$43\frac{1}{2}$ in.	3	24.2
45.2 in.	$45\frac{2}{10}$ in.	$52\frac{3}{8}$ in.	4	12.1
			4	22.2
			4	34.1
e	*f*	*g*	2	13.1
35.7 in.	$35\frac{7}{10}$ in.	$62\frac{5}{8}$ in.	4	21.2
23.3 in.	$23\frac{3}{10}$ in.	$72\frac{3}{8}$ in.	4	13.1

I = 1
II = 2
III = 3
IIII = 4
IV = 4
V = 5
VI = 6





VII = 7 VIII = 8
IX = 9 X = 10 XI = 11 XII = 12

1. When the long hand of a clock points to XII and the short hand to IX, it is —— o'clock.

2. At "5 minutes past 9," the long hand points to ——. At "half past 3," the long hand points to ——. At "quarter past 6," the long hand points to ——. At "20 minutes past 8," the long hand points to ——.

3. "Half past 9" is usually printed, 9:30.

4. "Quarter past 10" is usually printed, 10:15.

5. "Quarter of 10" is usually printed, 9:45.

Find the differences:

a	*b*	*c*	*d*
27.6 in.	$27\frac{6}{10}$ in.	356 in.	48 in.
14.4 in.	$14\frac{4}{10}$ in.	174 in.	23.2 in.

e	*f*	*g*	*h*
48.9 in.	$48\frac{9}{10}$ in.	429 in.	57 in.
23.5 in.	$23\frac{5}{10}$ in.	285 in.	$24\frac{1}{4}$ in.

1. The sum of 24 and 4 is ——.
2. The difference of 24 and 4 is ——.
3. The product of 24 and 4 is ——.
4. The quotient of 24 divided by 4 is ——.

5. The sum of two numbers is 26: one of the numbers is 4; the other number is ——.

6. The difference of two numbers is 4: the smaller number is 27; the larger number is ——.

7. The product of two numbers is 21: one of the numbers is 3; the other number is ——.

8. One pound less 3 ounces is —— ounces.
9. One foot less 3 inches is —— inches.
10. One sq. yd. less 3 sq. ft. is —— square feet.
11. One hour less 3 minutes is —— minutes.
12. One year less 3 months is —— months.
13. One month (April) less 3 days is —— days.
14. One peck less 3 quarts is —— quarts.

15. $\$20 \times 3$. (20 dollars multiplied by 3.) This means, 3 *times* \$20. 3 times \$20 are ——.

Find the products:

a. $\$ 49 \times 2$	*f.* $\$ 63 \times 3\frac{1}{3}$	*k.* $\$103 \times 5$
b. $\$249 \times 2$	*g.* $\$ 16 \times 4$	*l.* $\$ 33 \times 5\frac{1}{3}$
c. $\$ 60 \times 2\frac{1}{3}$*	*h.* $\$216 \times 4$	*m.* $\$ 14 \times 6$
d. $\$ 27 \times 3$	*i.* $\$ 36 \times 4\frac{1}{3}$	*n.* $\$104 \times 6$
e. $\$227 \times 3$	*j.* $\$ 23 \times 5$	*o.* $\$ 30 \times 6\frac{1}{3}$

* This means, 2 *times* \$60 *plus one third of* \$60.

1. From October 1st to November 1st it is —— days. From October 11th to November 11th it is —— days.

2. From November 1st to December 1st it is —— days. From November 20th to December 20th it is —— days.

3. From December 1st to January 1st it is —— days. From December 25th to January 25th it is —— days.

4. To-day is Wednesday. Eleven days from to-day will be ——.

5. One third of ten inches is —— inches.

6. Ten inches are 1 third of —— inches.

7. Five inches are what part of 10 inches?

8. Henry spent 2 thirds of his money and had 6 cents left. Before spending any money he had —— cents.

9. 21 days ÷ 7 days. (21 days divided by 7 days.) This means, *find how many times* 7 *days are contained in* 21 *days.* 7 days are contained in 21 days —— times.

Find the quotients:

a. 14 days ÷ 7 days
b. 140 days ÷ 7 days
c. 147 days ÷ 7 days
d. 210 days ÷ 7 days
e. 224 days ÷ 7 days
f. 231 days ÷ 7 days
g. 154 days ÷ 7 days
h. 161 days ÷ 7 days

1. I have a box whose inside measurements are as follows: length, 3 inches; breadth, 3 inches; depth, 2 inches. How many 1-inch cubes may be put into the box?

2. The solid content of a right prism 3 inches by 3 inches by 2 inches is —— cubic inches.

3 times 3 cubic inches are —— cubic inches.

2 times 9 cubic inches are —— cubic inches.

2 times 3 times 3 cu. in. equal —— cu. in.

3. One third of eight inches is how many inches?

SOLUTION

8 inches = 6 inches and 1 inch and 1 inch.
1 third of 6 and 1 and 1
is 2 and $\frac{1}{3}$ and $\frac{1}{3}$ or $2\frac{2}{3}$.

4. One third of 11 inches is —— inches.

5. One third of 14 inches is —— inches.

6. One third of 17 inches is —— inches.

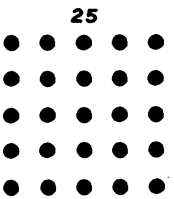
7. One third of 23 inches is —— inches.

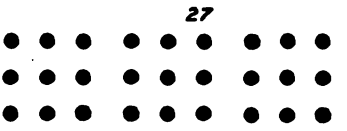
8. One third of 26 inches is —— inches.

9. 20 feet ÷ 3. (20 feet divided by 3.) This means, *find* 1 *third of* 20 *feet.* 1 third of 20 feet is —— feet.

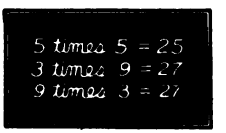
Find the quotients:

	a. 365 ft. ÷ 3	*f.* 428 ft. ÷ 3
	b. 668 ft. ÷ 3	*g.* 455 ft. ÷ 3
3)638 ft.	*c.* 938 ft. ÷ 3	*h.* 458 ft. ÷ 3
$212\frac{2}{3}$ ft.	*d.* 965 ft. ÷ 3	*i.* 435 ft. ÷ 3
	e. 425 ft. ÷ 3	*j.* 513 ft. ÷ 3





1. Five times 5 are ——.
2. Three times 9 are ——.
3. Nine times 3 are ——.



4. 24 is —— 12's. 25 is —— 5's.
5. Twenty-six (26) is —— tens and —— units.
6. Twenty-six feet are —— yards and —— feet.
7. Twenty-seven tenths are —— and —— tenths.
8. Twenty-seven square feet are —— square yards.
9. Beginning with 5, add by 5's to 40.
10. Beginning with 1, add by 5's to 41.
11. Review, adding by 2's, 3's and 4's.

Find the sums:

a	*b*	*c*	*d*	*i*	*j*
235	34.5	265	$224\frac{1}{2}$	3	24.1
275	28.5	255	$233\frac{3}{10}$	4	12.2
				4	32.1
e	*f*	*g*	*h*	2	34.2
124	21.3	324	$232\frac{1}{2}$	4	42.1
233	44.2	215	$121\frac{1}{2}$	2	23.2
126	23.5	147	$222\frac{1}{2}$	5	34

1. In a week there are 5 school days; in 5 weeks there are —— school days; in 4 weeks, —— school days.

2. In 1 square yard there are —— square feet; in 2 sq. yd. there are —— square feet; in 3 sq. yd. there are —— square feet.

3. Nine 3-cents stamps cost —— cents.

4. Nine yards are —— feet. $9\frac{1}{3}$ yd. are ——.

5. Six 4-cent stamps cost —— cents.

6. Five 5-cent stamps cost —— cents.

7. At $9 a ton, 2 tons of hay cost —— dollars; 3 tons cost —— dollars.

8. The 7th day of September, 1904, was Wednesday; the second Wednesday in the month was the ——th; the third Wednesday the ——st.

9. When kerosene is 9¢ a gallon, for 27¢ I can buy —— gallons.

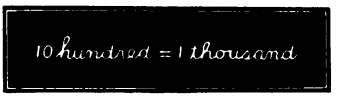
10. There were 27 trees in a garden; one third of them were apple trees and two thirds, pear trees. There were —— apple trees and —— pear trees.

Find the differences:

a	*b*	*c*	*d*	*e*
28.4	$28\frac{4}{10}$	438	68	425
14.8	$14\frac{8}{10}$	273	23.4	116

f	*g*	*h*	*i*	*j*
57.2	$57\frac{2}{10}$	729	78	347
23.6	$23\frac{6}{10}$	384	24.3	162

1. George had 27 cents; he spent 2 thirds of his money; he then had —— cents.



2. Benjamin lives 2.3 miles north of the Square and Levi lives 3.1 miles south of the Square. How far is it from Benjamin's home to Levi's home?

3. William drew a square. Each side of it was 1.1 inches. We may call it a 1.1-inch square. The perimeter of the square was —— and —— in.

4. 2563 is 2 thousand, 5 hundred, 6 tens, and 3 units.

Write in figures:

a. Four thousand one hundred forty-five; two thousand seven hundred eighty-six.

Read the following:

5. 2375; 8764; 9256; 2000.

Multiply: . .		*For Study*
b. \$634 × 2	*k.* \$ 30 × 2⅓	3 times 1 = 3
c. \$ 60 × 2⅓*	*l.* \$303 × 5	3 times 2 = 6
d. \$523 × 3	*m.* \$ 90 × 2⅓	3 times 3 = 9
e. \$ 63 × 2⅓	*n.* \$506 × 2	3 times 4 = 12
f. \$622 × 4	*o.* \$ 93 × 2⅓	3 times 5 = 15
g. \$ 36 × 2⅓	*p.* \$204 × 6	3 times 6 = 18
h. \$311 × 5	*q.* \$ 66 × 2⅓	3 times 7 = 21
i. \$ 33 × 2⅓	*r.* \$105 × 3	3 times 8 = 24
j. \$404 × 6	*s.* \$ 99 × 2⅓	3 times 9 = 27

* This means, 2 *times* \$60 *plus* ⅓ *of* \$60.

1. Imagine an oblong 9 feet by 3 feet. Imagine it divided into —— 1-foot squares. The area of this oblong is —— square feet.

3 times 9 square feet are —— square feet.

27 square feet equal —— square yards.

2. Clyan drew an oblong on his slate. It contained 24 square inches. It was 8 inches long. It was —— inches wide.

The perimeter of this oblong was —— inches.

3. Draw a line 1 tenth of an inch long. Make a square each side of which is 1 tenth of an inch. How many such squares could be drawn in a 1-inch square?

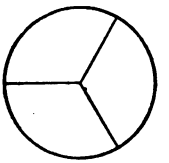
4. When wood is $6 a cord, for $24 I can buy —— cords; for $27 I can buy —— cords.

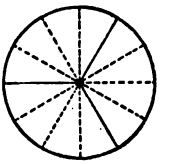
5. When sugar is 4¢ a pound, for 24¢ I can buy —— pounds; for 26¢ I can buy —— pounds.

6. 20 lb. ÷ 5 lb. (20 lb. divided by 5 lb.) This means, *find how many times 5 lb. are contained in 20 lb.* 5 lb. are contained in 20 lb. —— times.

Find the quotients:

a. 125 lb. ÷ 5 lb.	*f.* 2025 lb. ÷ 5 lb.
b. 1025 lb. ÷ 5 lb.	*g.* 250 lb. ÷ 5 lb.
c. 175 lb. ÷ 5 lb.	*h.* 2150 lb. ÷ 5 lb.
d. 1525 lb. ÷ 5 lb.	*i.* 260 lb. ÷ 5 lb.
e. 210 lb. ÷ 5 lb.	*j.* 2650 lb. ÷ 5 lb.





1. One whole is —— twelfths.
2. One third is —— twelfths.
3. Two thirds are —— twelfths.
4. One third and 1 twelfth are —— twelfths.
5. One third less 1 twelfth is —— twelfths.
6. Two thirds and 1 twelfth are —— twelfths.
7. Two thirds less 1 twelfth are —— twelfths.
8. One third and 5 twelfths are —— twelfths.
9. Two thirds less 5 twelfths are —— twelfths.
10. Three times 2 twelfths are —— twelfths.
11. Two times 5 twelfths are —— twelfths.
12. One twelfth is contained in 1 third —— times.
13. One twelfth is contained in 2 thirds —— times.
14. One fourth of 1 third is —— ——.

Make problems that require such figure processes as are indicated by the following, and find quotients:

$$4\overline{)567 \text{ ft.}}$$

$$141\tfrac{3}{4} \text{ ft.}$$

a. 327 ft. ÷ 4
b. 3264 ft. ÷ 4
c. 566 ft. ÷ 4
d. 6072 ft. ÷ 4
e. 708 ft. ÷ 4
f. 7048 ft. ÷ 4

1. One inch is —— —— of a foot.
2. Four inches are —— —— of a foot.
3. Eight inches are —— —— of a foot.
4. Eleven inches are —— —— of a foot.
5. Thirteen inches are —— and —— —— feet.

6. $\frac{1}{3}$ of a ft. + $\frac{1}{12}$ of a ft. =
7. $\frac{1}{3}$ of a ft. − $\frac{1}{12}$ of a ft. = $4\frac{1}{3} - 2\frac{1}{12} =$
8. $\frac{5}{12}$ of a ft. × 2 = * $6\frac{5}{12} \times 2 =$
9. $1\frac{1}{3}$ ft. ÷ $\frac{1}{12}$ of a ft. = * $1\frac{2}{3} \div \frac{1}{12} =$
10. $6\frac{2}{3}$ ft. ÷ 2 = * $8\frac{2}{3} \div 2 =$

11. Draw a line 3 ft. long; erase from it $1\frac{5}{12}$ ft.; the line that is left is —— and —— —— feet long.

12. Henry drew a $1\frac{1}{3}$ ft. square. The perimeter of the square was —— and —— —— feet. $1\frac{1}{3} \times 4 =$

13. James had a piece of wire $1\frac{3}{12}$ ft. long. He divided it into 3 equal pieces. Each piece was —— —— of a foot long. $1\frac{3}{12} \div 3 =$

Find the sums:

a	*b*	*c*	*d*	*i*	*j*
824	36.4	846	$642\frac{1}{12}$	3	22.2
639	92.6	314	$124\frac{1}{3}$	2	33.3
				4	12.1
e	*f*	*g*	*h*	2	12.1
254	31.4	321	$224\frac{1}{12}$	3	13.1
326	22.6	146	122	4	31.3
258	32.5	233	$211\frac{1}{12}$	5	21.2

*Tell the meaning.

1. Two 15's are ——.
2. Four 15's are ——.
3. In a half minute there are —— seconds.
4. In a quarter of a minute there are —— seconds.
5. In 3 quarters of a minute there are —— seconds.
6. Where is the long hand of a clock at "quarter of 2"? at "quarter past 2"?

(1) *Tell the meaning,* (2) *give the answer, and* (3) *make a problem for each of the following:*

7.	$6\frac{1}{2}+2\frac{1}{4}$	means ——.*	$6\frac{1}{2}+2\frac{1}{4}=$
8.	$6\frac{1}{2}-2\frac{1}{4}$	means ——.	$6\frac{1}{2}-2\frac{1}{4}=$
9.	$\$6\frac{1}{2}\times 2$	means ——.	$\$6\frac{1}{2}\times 2=$
10.	$\$6\frac{1}{2}\times \frac{1}{2}$	means ——.	$\$6\frac{1}{2}\times \frac{1}{2}=$
11.	$\$6\frac{1}{2}\times 2\frac{1}{2}$	means ——.†	$\$6\frac{1}{2}\times 2\frac{1}{2}=$
12.	$\$6\frac{1}{2}\div \$\frac{1}{2}$	means ——.	$\$6\frac{1}{2}\div \$\frac{1}{2}=$
13.	$\$6\frac{1}{2}\div 2$	means ——.	$\$6\frac{1}{2}\div 2=$

Find the differences:

a	*b*	*c*	*d*
84.5	$84\frac{5}{10}$	1846	647
37.2	$37\frac{2}{10}$	918	212.5

e	*f*	*g*	*h*
86.5	$86\frac{5}{10}$	2438	954
38.2	$38\frac{2}{10}$	1238	281.4

* See page 87, Nos. 4 to 8. † Find 2 times $\$6\frac{1}{2}$ plus $\frac{1}{2}$ of $\$6\frac{1}{2}$.

1. The sum of $4\frac{1}{2}$ and $4\frac{3}{4}$ is ——.
2. The difference of 5 and $3\frac{1}{2}$ is ——.
3. The product of $5\frac{1}{2} \times 3$ is ——.
4. The product of $12 \times \frac{3}{4}$ is ——.*
5. The quotient of $4\frac{1}{2} \div \frac{1}{4}$ is ——.†

6. The sum of two numbers is 44; one of the numbers is 8; the other number is ——.

7. The difference of two numbers is 8; the smaller number is 18; the larger number is ——.

8. The product of two numbers is 32; one of the numbers is 4; the other number is ——.

9. One pound and 11 ounces are —— ounces.
$$16 + 10 + 1 =$$

10. One foot and 11 inches are —— inches.
$$12 + 10 + 1 =$$

11. One hour and 11 minutes are —— minutes.
$$60 + 10 + 1 =$$

Make problems that require such figure processes as are indicated by the following, and find products:

a. $65¢ \times 5$	*f.* $48¢ \times 3\frac{1}{2}$	*k.* 1304×7
b. $42¢ \times 8$	*g.* $85¢ \times 3$	*l.* $842 \times 3\frac{1}{2}$
c. $56¢ \times 4\frac{1}{2}$	*h.* $34¢ \times 6$	*m.* 1234×5
d. $34¢ \times 7$	*i.* $62¢ \times 5\frac{1}{2}$	*n.* 1234×6
e. $23¢ \times 9$	*j.* 2340×4	*o.* $234 \times 5\frac{1}{2}$

* Think of this as meaning, *find* $\frac{3}{4}$ *of* 12.

† Think of this as meaning, *find how many times* $\frac{1}{4}$ *is contained in* $4\frac{1}{2}$.

1. In January there are —— weeks and —— days.
2. In February there are —— weeks and —— days.
3. In March there are —— weeks and —— days.
4. In April there are —— weeks and —— days.
5. In May there are —— weeks and —— days.
6. In June there are —— weeks and —— days.
7. In July there are —— weeks and —— days.
8. In August there are —— weeks and —— days.
9. In September there are —— weeks and —— days.
10. In October there are —— weeks and —— days.
11. In November there are —— weeks and —— days.
12. In December there are —— weeks and —— days.

Can you read the 12 statements given above, filling each blank correctly, in 40 seconds? Can you do it if they are written on the blackboard in some other order? Try it.

Make problems that require such figure processes as are indicated by the following, and find quotients:

a. 288 sq. ft. ÷ 9 sq. ft.
b. 297 sq. ft. ÷ 9 sq. ft.
c. 256 quarts ÷ 8 quarts
d. 308 days ÷ 7 days
e. 204 days ÷ 6 days
f. 210 days ÷ 6 days

1. The solid content of a right prism 3 in. by 4 in. by 2 in. is —— cubic inches.
3 times 4 cubic inches are —— cubic inches.
2 times 12 cubic inches are —— cubic inches.
2 times 3 times 4 cubic inches are —— cubic inches.

2. One fifth of 12 inches is —— inches.

3. One fifth of 17 inches is —— inches.

4. At \$8 each, 3 suits of clothes cost —— dollars.

a. At \$45 each, 6 suits of clothes cost —— dollars.

5. A bushel of wheat weighs 60 lb.; 2 bushels weigh —— lb.

b. A bushel of corn weighs 56 lb. Five bushels of corn weigh how much?

6. Three melons cost 24¢; 1 melon cost —— cents.

c. Three acres of land cost \$756. How much did 1 acre cost?

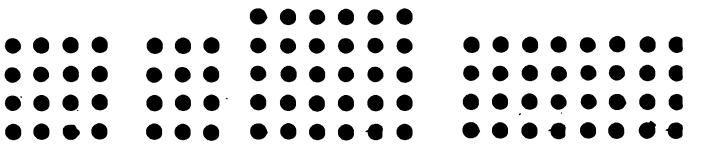
7. A hen sat on 12 eggs; 1 fourth of them did not hatch; there were —— chickens.

d. John had 96 cents. He spent 1 fourth of his money. How much was left?

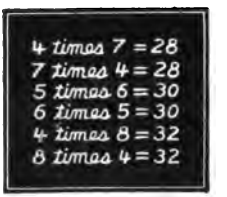
$5)\overline{\$567}$
$\$113\frac{2}{5}$

e. \$606 ÷ 5
f. \$707 ÷ 5
g. \$528 ÷ 5
h. \$519 ÷ 5

i. 1026 ÷ 5
j. 1508 ÷ 5
k. 2430 ÷ 5
l. 1536 ÷ 5



1. Four times 7 are ——.
2. Five times 6 are ——.
3. Four times 8 are ——.
4. Seven times 4 are ——.
5. Six times 5 are ——.
6. Eight times 4 are ——.
7. Twenty-eight days are —— weeks.



28 is —— 7's.
32 is —— 8's.

8. Thirty inches are —— feet and —— inches.
9. Thirty-two quarts are —— gallons.
10. Thirty-two quarts are —— pecks.
11. Thirty-two (32) is —— tens and —— units.
12. Beginning with 4, add by 5's to 44.
13. Review, adding by 2's, 3's, and 4's.

Find the sums:

a	*b*	*c*	*d*	*i*	*j*
954	76.3	375	$746\frac{1}{2}$	4	234
328	84.2	286	$422\frac{3}{10}$	5	142
				5	321
e	*f*	*g*	*h*	5	352
325	25.3	326	$832\frac{1}{5}$	5	212
436	36.5	143	521	5	304
261	12.3	275	$314\frac{1}{10}$	3	123

1. Four weeks and 2 days are —— days.

2. The perimeter of an 8-inch square is —— inches. $8+8+8+8=$ 4 times $8=$

3. Seven 4-cent stamps cost —— cents.

4. Eight 4-cent stamps cost —— cents.

5. Add by 6's from 6 to 36; by 9's from 9 to 27.

6. Mary's flower bed was 8 feet long and 4 feet wide. Its perimeter was —— feet. $8+8+4+4=$

a. What is the perimeter of a strip of land that is 43 feet long and 24 feet wide?

7. Ellen's flower bed was 7 feet long and 4 feet wide. Its area was —— square feet.

b. What is the area of a bed 32 feet long and 9 feet wide?

8. Six spoons are a set. 30 spoons are —— sets. 24 spoons are —— sets.

c. Two hundred fifty-two spoons are how many sets?

9. In an orchard there are 5 rows of trees, 6 trees in a row. How many trees?

d. In a timber belt there are five rows of trees, 146 in a row. How many trees?

e. From 1426 subtract 261.

f. From 2625 subtract 1 half of 846.

g. From 2480 subtract 805.

h. From 2464 subtract 1 half of 230.

1. 200 cents equal —— dollars.

2. 300 cents equal —— dollars.

3. 425 cents equal 4 dollars and 25 cents: written $4.25.

Write in figures:

a. Three dollars and thirty-six cents.

b. Eight dollars and forty-five cents.

c. Five dollars and ninety-four cents.

d. Six dollars and thirty-seven cents.

4. William had 36 cents; he spent 1 fourth of his money; he then had —— cents.

e. Hudson had $8.40; he spent 1 fourth of his money. How much money did he then have?

5. Bought 6 lemons at 4¢ each and 2 tablets at 10¢ each; gave the salesman half a dollar. How much change should I receive?

f. Bought 9 sheep at $4 each and 3 calves at $8 each. If in payment for these I gave a 100 dollar bill, how much money should be given back to me?

g. Add $3.50 and $4.40; from the sum subtract $5.20.

h. Multiply 346 by 3

i. Multiply 346 by $\frac{1}{2}$

j. Multiply 346 by $3\frac{1}{2}$

k. Multiply 438 by 4

l. Multiply 562 by 5

m. Multiply 562 by $\frac{1}{2}$

n. Multiply 562 by $5\frac{1}{2}$

o. Multiply 264 by 2

1. Imagine an oblong 8 feet by 4 feet. The area of this oblong is —— square feet. Show this by a diagram 8 inches by 4 inches.

4 times 8 square inches are —— square inches.

4 times 8 square feet are —— square feet.

2. The perimeter of the oblong described in No. 1 is —— feet.

3. I am thinking of an oblong whose area is 30 square inches; its width is 5 inches; its length is —— inches.

a. I am thinking of a flower-bed whose area is 320 square feet; its width is 8 ft. How long is it?

4. When coal is $4 a ton, for $28 I can buy —— tons.

b. When coal is $4 a ton, how many tons can be bought for $332?

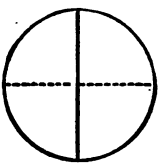
5. If 2 pounds of candy cost 40 cents, 3 pounds will cost —— cents.

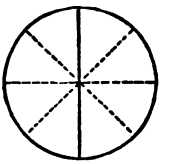
c. If 2 tons of hay cost $26, how much will 3 tons cost?

6. If 1 half of a pound of sugar costs 3 cents, 5 pounds at the same rate will cost —— cents.

d. If 1 half of an acre of land costs $132, how much will 5 acres cost at the same rate?

e. $436 ÷ $4	*f.* $325 ÷ $5	*g.* $300 ÷ $6
h. $231 ÷ $7	*i.* $336 ÷ $8	*j.* $328 ÷ $8
k. 1326 ÷ 2	*l.* 2346 ÷ 3	*m.* 2100 ÷ 4





1. One whole is —— eighths.
2. One half is —— eighths.
3. One fourth is —— eighths.
4. Three fourths are —— eighths.
5. One fourth and 1 eighth are —— eighths.
6. One fourth less 1 eighth is —— eighth.
7. Three fourths and 1 eighth are —— eighths.
8. Three fourths less 1 eighth are —— eighths.
9. Four times 2 eighths are ———.
10. John rode on his bicycle 32 miles in 4 hours; he rode at the rate of —— miles an hour. 32 miles ÷ 4 =

a. A locomotive traveled 176 miles in 4 hours. This was at the rate of how many miles an hour?

11. Harry rode his wheel 33 miles in 3 hours; he rode at the rate of ——— miles an hour. 33 miles ÷ 4 =

b. An automobile traveled 137 miles in 4 hours; this was at the rate of how many miles an hour?

c. 55 mi. ÷ 5	*d.* 565 mi. ÷ 5	*e.* 566 mi. ÷ 5
f. 72 mi. ÷ 6	*g.* 198 mi. ÷ 6	*h.* 200 mi. ÷ 6
i. 364 ÷ 7	*j.* 3717 ÷ 7	*k.* 2388 ÷ 7

Review page 57.

1. One half of a peck and 1 eighth of a peck are —— quarts. $\frac{1}{2}+\frac{1}{8}=\frac{}{8}$

2. One half of a peck less 1 eighth of a peck is —— quarts. $\frac{1}{2}-\frac{1}{8}=\frac{}{8}$

3. Three fourths of a peck and 1 eighth of a peck are —— quarts. $\frac{3}{4}+\frac{1}{8}=\frac{}{8}$

4. Three fourths of a peck less 1 eighth of a peck are —— quarts. $\frac{3}{4}-\frac{1}{8}=\frac{}{8}$

5. I can find the sum or the difference of halves and eighths by changing the halves to ——ths.

6. I can find the sum or the difference of fourths and eighths by changing the fourths to ——ths.

7. Draw a line $1\frac{7}{8}$ inches long. Erase 1 half inch from the line. How long is it now?

8. Draw a line $1\frac{5}{8}$ inches long. Add a half inch to the line. How long is it now?

9. Draw a line $1\frac{6}{8}$ inches long. Erase half of the line. How long is the part that remains?

10. Draw a line $\frac{7}{8}$ of an inch long. Draw another twice as long. How long is the second line?

Add:

a	*b*	*c*	*d*	*e*
124	235	321	301	$224\frac{1}{2}$
325	324	213	103	125
216	106	123	304	$326\frac{1}{4}$
332	222	423	403	231
624	520	324	505	$104\frac{1}{4}$

1. In a half hour there are —— minutes.

2. In a quarter of an hour there are —— minutes.

3. In three quarters of an hour there are —— minutes.

4. From "quarter of 3" to "10 minutes past 3" it is —— minutes.

5. From "10 minutes past 3" to "20 minutes of 4" it is ———.

6. From 1 o'clock to 3:30 it is ——— hours.

7. $4\frac{1}{2} + 2\frac{1}{2}$ means, $4\frac{1}{2}$ *and* $2\frac{1}{2}$; $4\frac{1}{2}$ and $2\frac{1}{2}$ =

8. $4\frac{1}{2} - 2\frac{1}{2}$ means, $4\frac{1}{2}$ *less* $2\frac{1}{2}$; $4\frac{1}{2}$ less $2\frac{1}{2}$ =

9. $4\frac{1}{2}$ in. $\times$ 2 means, 2 *times* $4\frac{1}{2}$ *in.*; 2 times $4\frac{1}{2}$ in. are —— inches.

10. $4\frac{1}{2}$ in. $\times \frac{1}{2}$ means, *find* 1 *half of* $4\frac{1}{2}$ *in.*; 1 half of $4\frac{1}{2}$ in. is ——— inches.

11. $4\frac{1}{2}$ inches $\div \frac{1}{2}$ in. means, *find how many times* $\frac{1}{2}$ *in. is contained in* $4\frac{1}{2}$ *in.*; $\frac{1}{2}$ inch is contained in $4\frac{1}{2}$ in. —— times.

12. $4\frac{1}{2}$ in. $\div 2$ means, *find* 1 *half of* $4\frac{1}{2}$ *in.*; 1 half of $4\frac{1}{2}$ in. is ——— inches.

Find the differences:

a	*b*	*c*	*d*
45.6	$45\frac{6}{10}$	1246	436
17.2	$17\frac{2}{10}$	724	123.5
e	*f*	*g*	*h*
64.8	$64\frac{8}{10}$	1574	578
39.3	$39\frac{3}{10}$	832	224.3

1. The sum of $3\frac{1}{2}$ and $4\frac{1}{2}$ is ——.
2. The difference of $4\frac{3}{4}$ and $3\frac{1}{2}$ is ——.
3. The product of $3\frac{1}{2}$ and 2 is ——.
4. The quotient of $4\frac{1}{2}$ divided by $\frac{1}{2}$ is ——.*
5. The quotient of $4\frac{1}{2}$ divided by 2 is ——.†

6. The sum of two numbers is 35; one of the numbers is 10; the other number is ——.

7. The difference of two numbers is 10; the larger number is 47; the smaller number is ——.

8. The product of two numbers is 27; one of the numbers is 3; the other number is ——.

9. One pound and five ounces are —— ounces.
10. One hour and 20 minutes are —— minutes.
11. One half hour and 10 minutes are —— minutes.

Find the products:

a.	32 lb. × 6	*i.*	48 lb. × 4
b.	32 lb. × $6\frac{1}{2}$ ‡	*j.*	48 lb. × $4\frac{1}{2}$
c.	60 lb. × 4	*k.*	56 lb. × 3
d.	60 lb. × $4\frac{1}{2}$	*l.*	56 lb. × $3\frac{1}{2}$
e.	32 lb. × 8	*m.*	56 lb. × 4
f.	32 lb. × $8\frac{1}{2}$	*n.*	56 lb. × $4\frac{1}{2}$
g.	32 lb. × 9	*o.*	60 lb. × 5
h.	32 lb. × $9\frac{1}{2}$	*p.*	60 lb. × $5\frac{1}{2}$

* Think of this as meaning, *find how many times* $\frac{1}{2}$ *is contained in* $4\frac{1}{2}$.

† Think of this as meaning, *find* 1 *half of* $4\frac{1}{2}$.

‡ This means, *find* 6 *times* 32 *lb. plus* 1 *half of* 32 *lb.*

1. From January 3d to January 10th it is —— days. If January 3d is Tuesday, January 10th is ——.

2. From May 5th to May 13th it is —— days. If May 5th is Sunday, May 13th is ——.

3. From April 10th to April 16th it is —— days. If April 10th is Friday, April 16th is ——.

4. From June 20th to June 29th it is —— days. If June 20th is Saturday, June 29th is ——.

5. To-day is —day. Nine days from to-day will be ——.

6. Two thirds of 12 eggs are —— eggs.

7. Twelve eggs are 2 thirds of —— eggs.

8. Five eggs are what part of 15 eggs?

9. 20 is 1 half of ——. 20 is 1 third of ——. 20 is 1 fourth of ——. 20 is 1 fifth of ——.

10. 24 qt. ÷ 4 qt. (24 quarts divided by 4 quarts.) This means, *find how many times* 4 *quarts are contained in* 24 *quarts*. 4 quarts are contained in 24 quarts —— times.

Find the quotients :

a. 128 qt. ÷ 4 qt.	*f.* 2096 qt. ÷ 4 qt.
b. 1248 qt. ÷ 4 qt.	*g.* 252 qt. ÷ 4 qt.
c. 132 qt. ÷ 4 qt.	*h.* 2120 qt. ÷ 4 qt.
d. 1652 qt. ÷ 4 qt.	*i.* 260 qt. ÷ 4 qt.
e. 216 qt. ÷ 4 qt.	*j.* 2560 qt. ÷ 4 qt.

1. Build a 2-inch cube with 1-inch cubes. How many 1-inch cubes in the first layer? how many in the second layer? how many in both?

A 2-inch cube is equal to —— 1-inch cubes.

2. Build a 3-inch cube with 1-inch cubes. How many 1-inch cubes in the first layer? how many in the second layer? how many in the third layer? how many in all?

A 3-inch cube is equal to —— 1-inch cubes.

3. One fourth of 10 inches is how many inches?

SOLUTION

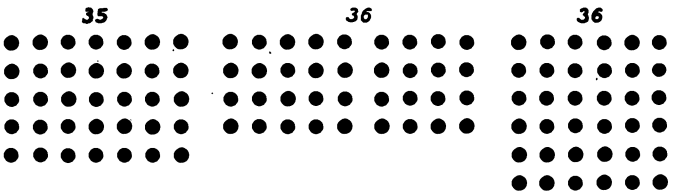
10 inches = 8 inches and 1 inch and 1 inch.
1 fourth of 8 and 1 and 1
is 2 and $\frac{1}{4}$ and $\frac{1}{4}$ or $2\frac{2}{4} = 2\frac{1}{2}$.

4. One fourth of 14 inches is —— inches.
5. One fourth of 17 inches is —— inches.
6. One fourth of 18 inches is —— inches.
7. One fourth of 22 inches is —— inches.
8. 22 ft. ÷ 4. (22 feet divided by 4.) This means, *find* 1 *fourth of* 22 *feet.* 1 fourth of 22 feet is ———— feet.

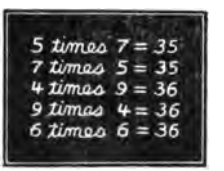
Find the quotients:

$4\overline{)526}$ ft.
$131\frac{1}{2}$ ft.

a. 134 ft. ÷ 4 *b.* 1326 ft. ÷ 4
c. 178 ft. ÷ 4 *d.* 1762 ft. ÷ 4
e. 214 ft. ÷ 4 *f.* 2127 ft. ÷ 4
g. 253 ft. ÷ 4 *h.* 2565 ft. ÷ 4
i. 144 ft. ÷ 4 *j.* 1447 ft. ÷ 4



1. Five times 7 are ——.
2. Four times 9 are ——.
3. Six times six are ——.
4. Seven times 5 are ——.
5. Nine times 4 are ——.



6. 35 is —— 7's. 36 is —— 9's.

7. Thirty-three cents are —— dimes and —— cents.

8. Thirty-five days are —— weeks.

9. Thirty-six square feet are —— square yards.

10. In a certain school there are 35 pupils. One fifth of these are absent. There are —— present.

a. In a certain school there are 650 pupils. One fifth of these are absent. How many present?

11. What is the cost of $5\frac{1}{2}$ yards of muslin at 6 ¢ a yard?

b. What is the cost of $5\frac{1}{2}$ acres of land at $240 per acre?

c. Add 224, 335, 26, 144, and 125.

d. Add 321, 134, 14, 211, and 113.

e. Add 111, 222, 33, 444, and 555.

f. Add 23.1, 32.2, 2.3, 13.4, and 45.

1. A nickel equals —— cents; 6 nickels equal —— cents; 7 nickels equal —— cents; 4 nickels equal —— cents.

2. In one week there are —— days; in 2 weeks there are —— days; in 3 weeks, —— days; in 4 weeks, —— days; in 5 weeks, —— days.

3. At 4¢ each, 6 lemons cost —— cents; 7 lemons cost —— cents; 8 lemons cost —— cents; 9 lemons cost —— cents.

4. At 9¢ each, 2 melons cost —— cents; 3 melons cost —— cents; 4 melons cost —— cents.

5. Seven 5-cent stamps cost —— cents.

6. Eight 4-cent stamps cost —— cents.

7. Six 5-cent stamps cost —— cents.

8. The seventh day of a certain month was Monday, the next Monday was the ——th; the next, the ——st; the next, the ——th.

9. Add by 7's to 28; by 8's from 8 to 32.

10. Add by 6's from 6 to 30; by 5's from 5 to 30.

Find the differences:

a	*b*	*c*	*d*
67.2	$67\frac{2}{10}$	1467	538
21.4	$21\frac{4}{10}$	843	125.4
e	*f*	*g*	*h*
75.7	$75\frac{7}{10}$	1842	837
28.3	$28\frac{3}{10}$	628	332.7

1. Henry had 36 cents; he spent 3 fourths of his money; he then had —— cents.

2. Amos lives 1 half of a mile east of the depot; Joseph lives 3 fourths of a mile west of the depot; from Amos's home to Joseph's home it is —— miles.

3. Bought 4 melons at 9¢ each and 2 at 5¢ each; gave the salesman half a dollar. How much change should I receive?

4. Ten degrees below the freezing point is how many degrees above zero?

5. A man agreed to pay $5 a day for keeping his family at a hotel. One week's board will cost —— dollars.

Read the following:

6. 2304; 204; 2004; 5046; 7050; 2500; 4000; 1001.

Find the products:

a. 60 min. × 4	*b.* 60 min. × $4\frac{1}{2}$	**4 times 1 = 4**
c. 16 oz. × 5	*d.* 16 oz. × $4\frac{1}{2}$	**4 times 2 = 8**
e. 12 mo. × 9	*f.* 12 mo. × $8\frac{1}{2}$	**4 times 3 = 12**
g. 1325 × 3	*h.* 624 × $2\frac{1}{2}$	**4 times 4 = 16**
i. 1236 × 4	*j.* 428 × $2\frac{1}{2}$	**4 times 5 = 20**
k. 1534 × 4	*l.* 326 × $2\frac{1}{2}$	**4 times 6 = 24**
m. 1362 × 5	*n.* 362 × $5\frac{1}{2}$	**4 times 7 = 28**
o. 1430 × 4	*p.* 430 × $4\frac{1}{2}$	**4 times 8 = 32**
q. 1244 × 3	*r.* 144 × $2\frac{1}{2}$	**4 times 9 = 36**

1. Imagine an oblong 8 feet by $4\frac{1}{2}$ feet. The area of this oblong is —— square feet. Show this by a diagram 8 in. by $4\frac{1}{2}$ inches.

$4\frac{1}{2}$ times 8 square feet are —— square feet.

8 times $4\frac{1}{2}$ square feet are —— square feet.

2. The perimeter of the oblong described in No. 1 is —— feet.

3. Draw a line 1 fifth of an inch long. Make a square each side of which is 1 fifth of an inch. How many such squares could be drawn in a 1-inch square?

4. The product of two numbers is 32; one of the numbers is 8; the other number is ——.

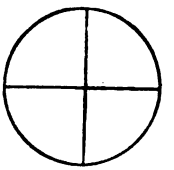
5. When coal is $4 a ton, for 36 dollars I can buy —— tons; for $32 I can buy —— tons.

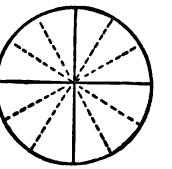
6. When milk is 4¢ a quart, for 28¢ I can buy —— quarts; for 30¢ I can buy —— quarts; for 36¢ I can buy —— quarts.

7. When hay is $8 a ton, for $32 I can buy —— tons; for $36 I can buy —— tons.

Make problems that require such figure processes as are indicated by the following, and find the quotients:

a. $216 ÷ $4	*b.* $224 ÷ $4	*c.* $2164 ÷ $4
d. $215 ÷ $5	*e.* $225 ÷ $5	*f.* $2250 ÷ $5
g. $192 ÷ $6	*h.* $204 ÷ $6	*i.* $2046 ÷ $6
j. $224 ÷ $7	*k.* $231 ÷ $7	*l.* $2317 ÷ $7
m. $328 ÷ $8	*n.* $336 ÷ $8	*o.* $3368 ÷ $8





1. One fourth is —— twelfths.
2. Two fourths are —— twelfths.
3. Three fourths are —— twelfths.
4. One fourth and 1 twelfth are —— twelfths.
5. One fourth less 1 twelfth is —— twelfths.
6. Three fourths and 1 twelfth are —— twelfths.
7. Three fourths less 1 twelfth are —— twelfths.
8. One fourth and 5 twelfths are —— twelfths.
9. Three fourths less 5 twelfths are —— twelfths.
10. Four times 2 twelfths are —— ——.
11. One twelfth is contained in 1 fourth —— times.
12. One third of 1 fourth is —— ——.
13. 21 lb. ÷ 4. (21 pounds divided by 4.). This means, *find* 1 *fourth of* 21 lb. One fourth of 21 lb. is —— pounds.

Find the quotients:

	a. 129 lb. ÷ 4	*b.* 1249 lb. ÷ 4
4)485 lb.	*c.* 165 lb. ÷ 4	*d.* 1685 lb. ÷ 4
121¼ lb.	*e.* 209 lb. ÷ 4	*f.* 2049 lb. ÷ 4
	g. 245 lb. ÷ 4	*h.* 2485 lb. ÷ 4

1. One fourth of a dozen eggs and 5 twelfths of a dozen are —— —— of a dozen. $\frac{1}{4}+\frac{5}{12}=\frac{\quad}{12}$

2. One half of a dozen eggs and 5 twelfths of a dozen are —— —— of a dozen. $\frac{1}{2}+\frac{5}{12}=\frac{\quad}{12}$

3. Three fourths of a dozen eggs and 5 twelfths of a dozen are —— ——. $\frac{3}{4}+\frac{5}{12}=\frac{\quad}{12}$

4. Three fourths of a dozen eggs less 5 twelfths of a dozen are —— —— of a dozen. $\frac{3}{4}-\frac{5}{12}=\frac{\quad}{12}$

5. One half of a dozen eggs less one twelfth of a dozen is —— —— of a dozen. $\frac{1}{2}-\frac{1}{12}=\frac{\quad}{12}$

6. I can find the sum or the difference of halves and twelfths by changing the halves to ——ths.

7. I can find the sum or the difference of fourths and twelfths by changing the fourths to ——ths.

8. Half of a dozen, 3 fourths of a dozen, and 5 twelfths of a dozen are how many? $\frac{1}{2}+\frac{3}{4}+\frac{5}{12}=\frac{\quad}{12}$

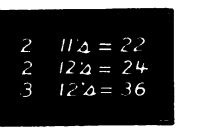
Find the sums:

a	*b*	*c*	*d*	*i*	*j*
836	74.5	924	$524\frac{1}{2}$	2	23.2
728	52.7	248	$832\frac{1}{12}$	3	31.3
				4	22.1
				5	33.2
e	*f*	*g*	*h*	5	13.3
346	34.4	254	$321\frac{1}{4}$	5	21.1
528	21.3	128	$142\frac{1}{2}$	4	12.2
415	62.5	325	$223\frac{1}{4}$	2	21.2

1. The long hand of a clock moves from I to II in —— minutes; from II to VI in —— minutes.

2. From 9:10 to 9:25 it is —— minutes.

3. From 9:50 to 10:10 it is —— minutes.



4. From 9:45 to 10:15 it is —— minutes.

5. From 9:10 to 9:40 it is —— minutes.

Review, if necessary, p. 87, Nos. 4 to 11; page 107, Nos. 7 to 13; p. 117, Nos. 7 to 12. Do not try to solve one of the following problems until you can tell its meaning.

6. $8\frac{1}{3}$ doz. $\times$ 2 means ————. $8\frac{1}{3} \times 2 =$

7. $8\frac{1}{3}$ doz. $\times \frac{1}{2}$ means ————. $8\frac{1}{3} \times \frac{1}{2} =$

8. 8 doz. $\times 2\frac{1}{2}$ means ————. $8 \times 2\frac{1}{2} =$

9. $8\frac{1}{3}$ doz. $\div \frac{1}{3}$ doz. means ————. $8\frac{1}{3} \div \frac{1}{3} =$

10. $8\frac{1}{3}$ doz. $\div 2$ means ————. $8\frac{1}{3} \div 2 =$

Remember that to multiply a number by 1 *half is to find* 1 *half of the number; to multiply a number by* $2\frac{1}{2}$ *is to find* 2 *times the number plus* 1 *half of the number.*

Multiply each of the following first by 1 half and then by $2\frac{1}{2}$: 8, 6, 7, 11, 12, 15, 20, 40, 60, 30.

a. From 1897 subtract 648.

b. From 2452 subtract 1 half of 820.

c. From 5606 subtract 519.

d. From 2725 subtract 1 half of 926.

e. From 3150 subtract 820.

f. From 5555 subtract 270.

g. From 2000 subtract 1 half of 700.

1. The sum of $5\frac{1}{3}$ and $5\frac{1}{12}$ is ——.
2. The difference of 6 and $4\frac{1}{3}$ is ——.
3. The product of $6\frac{1}{3} \times 3$ is ——.*
4. The product of $16 \times \frac{3}{4}$ is ——.*
5. The quotient of $4\frac{1}{3} \div \frac{1}{3}$ is ——.*
6. The quotient of $4\frac{1}{3} \div 2$ is ——.*

7. The sum of two numbers is 37; one of the numbers is 22; the other number is ——.

8. The difference of two numbers is 7; the larger number is 35; the smaller number is ——.

9. The product of two numbers is 36; one of the numbers is 4; the other number is ——.

10. One pound and 13 ounces are —— ounces.

$$16 + 10 + 3 =$$

11. One hour and 15 minutes are —— minutes.

$$60 + 10 + 5 =$$

12. One half hour and 18 minutes are —— minutes.

13. One quarter hour and 12 minutes are —— minutes.

14. Two feet are —— inches.
15. Three feet are —— inches.
16. One yard is —— inches.

$$\begin{array}{rr} 12 & 12 \\ \underline{12} & 12 \\ & \underline{12} \end{array}$$

Find the products:

a. $524 \times 2\frac{1}{2}$	*c.* $842 \times 4\frac{1}{2}$	*e.* $360 \times 6\frac{1}{2}$
b. $636 \times 3\frac{1}{2}$	*d.* $704 \times 5\frac{1}{2}$	*f.* $242 \times 7\frac{1}{2}$

* What does it mean?

1. From the first day of January to the first day of February it is —— days. This is —— weeks and —— days. Hence if the first day of January is Monday, the first day of February is ——. *The first day of February is always three days later in the week than the first day of January.*

2. January 1, 1905, was Sunday. On what day of the week was February 1, of the same year?

3. Two thirds of 18 cents are ——.

4. Eighteen cents are 2 thirds of —— cents.

5. Six cents are what part of 18 cents?

6. A boy had 18 cents; he spent 1 third of his money; he then had —— cents.

a. A man had $360; he spent 1 third of his money. How much money did he then have?

7. A boy sold 10 quarts of hickory nuts; this was 1 third of all he gathered; he gathered —— quarts.

b. A man sold 125 bushels of corn; this was 1 third of all he raised. How many bushels did he raise?

c. 432 ft. ÷ 3 ft.	*i.* 4116 ÷ 3
d. 726 ft. ÷ 3 ft.	*j.* 4209 ÷ 3
e. 513 ft. ÷ 3 ft.	*k.* 3425 ÷ 3
f. 942 ft. ÷ 3 ft.	*l.* 2546 ÷ 3
g. 216 ft. ÷ 3 ft.	*m.* 1462 ÷ 3
h. 304 ft. ÷ 3 ft.	*n.* 3241 ÷ 3

1. The solid content of a right prism 3 in. by 3 in. by 4 in. is —— cubic inches.
3 times 3 cubic inches are —— cubic inches.
4 times 9 cubic inches are —— cubic inches.
3 times 3 times 4 cubic inches are —— cubic inches.

2. At $9 each, 4 suits of clothes cost —— dollars.

a. At $58 each, 3 suits of clothes cost ——.

3. A bushel of oats weighs 32 lb.; 2 bushels weigh —— lb.

b. A bushel of barley weighs 48 lb. Four bushels of barley weigh how much?

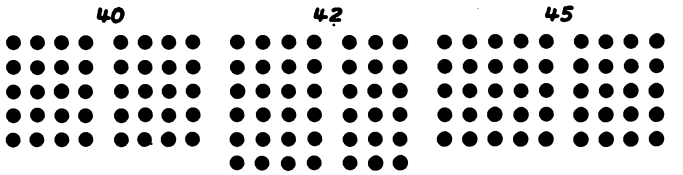
4. Four tablets cost 32¢; 1 tablet cost —— cents.

c. Four acres of land cost $928. How much did 1 acre cost?

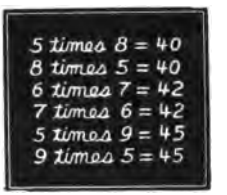
5. Mary had 25 chickens; a hawk killed 1 fifth of them; she then had —— chickens.

d. Mr. Smith had 650 bushels of oats. He sold 1 fifth of them. How many bushels had he left?

e. 525 bu. ÷ 5	*j.* 630 ÷ 4	*o.* 842 bu. ÷ 3
f. 525 bu. ÷ 3	*k.* 720 bu. ÷ 5	*p.* 932 ÷ 4
g. 525 ÷ 4	*l.* 720 bu. ÷ 3	*q.* 990 bu. ÷ 5
h. 630 bu. ÷ 5	*m.* 720 ÷ 4	*r.* 990 bu. ÷ 3
i. 630 bu. ÷ 3	*n.* 640 bu. ÷ 5	*s.* 992 ÷ 4



1. Five times 8 are ——.
2. Six times 7 are ——.
3. Five times 9 are ——.
4. Eight times 5 are ——.
5. Seven times 6 are ——.
6. Nine times 5 are ——.



7. 42 is —— 7's. 40 is —— 8's.
8. Thirty-eight days are —— weeks and —— days.
9. Thirty-nine (39) is —— tens and —— units.
10. Forty-five square feet are —— square yards.
11. In $1\frac{1}{2}$ hours there are —— minutes.

a. How many minutes in 7 hours?

Add:

b	*c*	*d*	*e*
$12\frac{1}{4}$	142	12.4	243
16	326	11.2	243
14	245	13.5	243
$15\frac{1}{2}$	130	12.2	243
12	202	16.3	243
13	111	10.1	243
$14\frac{5}{12}$	320	11.3	243
16	203	12.2	243
15	222	15.5	243

Multiply:

f	*g*
243	12.4
9	9

1. Six weeks and 3 days are —— days.

2. The perimeter of a 5-inch square is —— inches.

3. The area of a 5-inch square is —— square inches.

4. Seven 6-cent stamps cost —— cents.

5. Nine 5-cent stamps cost —— cents.

6. Eight 5-cent stamps cost —— cents.

7. Add by 7's from 7 to 42; by 8's from 8 to 40.

8. A certain table is 4 feet wide and 6 feet long. How many feet around it?

a. A room is 14 feet wide and 16 feet long. How many feet around it? How many yards of border will be required for papering the room?

9. A bushel of oats weighs 32 lb.; 1 half bushel weighs —— lb.; 1 fourth bushel weighs —— lb.

b. A barrel of flour weighs 196 lb. How much does a half barrel weigh? a fourth barrel?

10. When potatoes are 20 ¢ a peck, a half bushel will cost —— cents; a bushel will cost —— cents.

c. When potatoes are 15 ¢ a peck, how much will 7 bushels cost?

d. From 2346 subtract 1173.

e. From 3075 subtract 1 half of 964.

f. From 4006 subtract 1 half of 872.

g. From 5204 subtract the sum of 200 and 300.

Read the following:

1. $9.40; $18.07; $43.10; $75.94; $125.50.

Write in figures:

a. Five dollars and thirty-seven cents.

b. Nine dollars and five cents.

c. Ten dollars and fifteen cents.

2. Alice had 35 cents; she spent 2 fifths of her money; she then had —— cents.

d. William had $6.50; he spent 2 fifths of his money. How much money did he then have?

3. Bought 5 peaches at 2¢ each and 3 lemons at 4¢ each; gave the salesman a "quarter." How much change should I receive?

4. Bought 3 tons of coal at $8 a ton and 3 tons of coke at $5 per ton. How much change should I receive from 4 ten-dollar bills?

Find the products:	*For Study*
e. $8.34 multiplied by 3	5 times 1 = 5
f. $8.34 multiplied by $\frac{1}{2}$	5 times 2 = 10
g. $8.34 multiplied by $3\frac{1}{2}$	5 times 3 = 15
h. $6.52 multiplied by 4	5 times 4 = 20
i. $6.52 multiplied by $\frac{1}{2}$	5 times 5 = 25
j. $6.52 multiplied by $4\frac{1}{2}$	5 times 6 = 30
k. $4.88 multiplied by 2	5 times 7 = 35
l. $488 multiplied by $\frac{1}{2}$	5 times 8 = 40
m. $4.88 multiplied by $2\frac{1}{2}$	5 times 9 = 45

1. Imagine an oblong 9 feet by 5 feet. The area of this oblong is —— square feet. Show this by a diagram 9 inches by 5 inches.

2. I am thinking of an oblong whose area is 42 square inches; its width is 6 inches; its length is —— inches.

a. I am thinking of a long, narrow flower bed whose area is 252 square feet. It is 6 feet wide. How long is it?

3. When hay is $8 a ton, for $40 I can buy —— tons.

b. When hay is $8 a ton, how many tons can I buy for $336?

4. If 3 tablets cost 21 ¢, 5 tablets at the same rate will cost —— cents.

c. If 3 sacks of flour cost $3.60, how much will 5 sacks cost at the same rate?

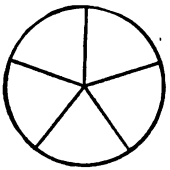
5. If half a pound of raisins costs 4 ¢, 5 pounds at the same rate will cost —— cents.

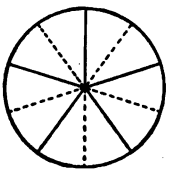
d. If half a ton of coal costs $2.30, how much will 5 tons cost at the same rate?

6. Twenty-four quarts are —— gallons.

e. 520 quarts are how many gallons?

f. 600 qt. ÷ 4 qt.	*g.* 700 qt. ÷ 4 qt.
h. 1720 ÷ 4	*i.* 1800 ÷ 4
j. 1920 ÷ 4	*k.* 2000 ÷ 4
l. 2100 ÷ 4	*m.* 2200 ÷ 4

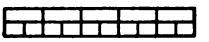




1. One whole is —— tenths.
2. One fifth is —— tenths.
3. Two fifths are —— tenths.
4. Three fifths are —— tenths.
5. One fifth and 1 tenth are —— tenths.
6. One fifth less 1 tenth is —— tenth.
7. Two fifths and 1 tenth are —— tenths.
8. Two fifths less 1 tenth are —— tenths.
9. Four times 2 tenths are —— tenths.
10. Three times 3 tenths are —— tenths.
11. Two tenths are contained in 6 tenths —— times.
12. One tenth is contained in 1 fifth —— times.
13. One half of 1 fifth is —— ——.
14. Otis had 36 ¢; he spent 1 sixth of his money; he then had —— cents.

a. Mr. Wheeler had $12.60; he spent 1 sixth of his money. How much had he then?

b. $6.24 ÷ 6	*e.* $12.36 ÷ 6	*h.* $15.00 ÷ 6
c. $7.20 ÷ 6	*f.* $13.20 ÷ 6	*i.* $15.60 ÷ 6
d. $8.40 ÷ 6	*g.* $14.40 ÷ 6	*j.* $16.20 ÷ 6



1. Sometimes inches are divided into fifths and tenths.

2. $\frac{1}{5}$ of an inch + $\frac{1}{10}$ of an in. = $3\frac{1}{5} + 2\frac{1}{10} =$

3. $\frac{1}{5}$ of an in. − $\frac{1}{10}$ of an in. = $4\frac{1}{5} - 2\frac{1}{10} =$

4. $\frac{3}{10}$ of an inch × 3 = * $2\frac{3}{10} \times 3 =$

5. $2\frac{1}{5}$ inches ÷ $\frac{1}{5}$ of an inch = * $1\frac{1}{5} \div \frac{1}{10} =$

6. $6\frac{1}{5}$ inches ÷ 2 = * $8\frac{1}{5} \div 2 =$

7. Herbert had a piece of silver wire 1.2 inches long. He divided it into 3 equal parts. Each part was —— of an inch long. 1.2 in. ÷ 3 = * $1\frac{2}{10}$ in. × 3 = *

8. I am thinking of a $1\frac{1}{5}$ in. square. Its perimeter is —— and —— fifths in. $1\frac{1}{5}$ in. × 4 =

9. Beginning with 2, add by 5's to 42.

10. Beginning with 3, add by 5's to 43.

Add:

a	*b*	*c*	*d*	*i*
$246\frac{1}{2}$	234	$24.30	35.2	35
$324\frac{1}{5}$	156	$15.35	27.1	35
105	375	$12.06	12.4	35
				35
e	*f*	*g*	*h*	35
$325\frac{1}{10}$	256	$37.20	26.8	35
206	375	$12.05	34.5	35
$205\frac{2}{5}$	842	$15.50	27.7	35

* What does it mean?

1. The short hand of a clock moves from I to III in —— hours; from II to VI in —— hours.

2. From 8:25 to 9:00 it is —— minutes.

3. From 8:25 to 9:10 it is —— minutes.

4. From 8:30 to 9:45 it is —— hour and —— minutes.

Review if necessary as suggested on page 127.

5. $7\frac{3}{10}$ in. $+ 2\frac{1}{5}$ in. means ——. $7\frac{3}{10} + 2\frac{1}{5} =$

6. $6\frac{7}{10}$ in. $- 2\frac{1}{5}$ in. means ——. $6\frac{7}{10} - 2\frac{1}{5} =$

7. $5\frac{3}{10}$ in. $\times 2$ means ——. $5\frac{3}{10} \times 2 =$

8. $8\frac{2}{5}$ in. $\times \frac{1}{2}$ means ——. $8\frac{2}{5} \times \frac{1}{2} =$

9. 10 in. $\times 2\frac{1}{2}$ means ——. $10 \times 2\frac{1}{2} =$

10. $2\frac{4}{5}$ in. $\div \frac{2}{5}$ in. means ——. $2\frac{4}{5} \div \frac{2}{5} =$

11. $2\frac{4}{5}$ in. $\div 2$ means ——. $2\frac{4}{5} \div 2 =$

To multiply a number by 1 third is to find 1 third of the number. To multiply a number by $2\frac{1}{3}$ is to *find 2 times the number plus $\frac{1}{3}$ of the number.*

12. Multiply each of the following, first by $\frac{1}{3}$ and then by $2\frac{1}{3}$: 6, 9, 12, 15, 30, \$60.

13. At 30¢ a yard how much will $2\frac{1}{3}$ yards of ribbon cost?

a. At \$2.70 a yard how much will $2\frac{1}{3}$ yards of cloth cost?

b. From \$46.24 subtract \$21.50.

c. From \$93.25 subtract \$8.03.

d. From \$75.00 subtract 1 half of \$34.80.

e. From \$89.50 subtract the sum of \$8.40 and \$3.70.

1. The sum of $6\frac{1}{5}$ and $6\frac{3}{10}$ is ——.
2. The difference of $6\frac{2}{5}$ and $2\frac{3}{10}$ is ——.
3. The product of $7\frac{2}{5} \times 3$ is ——.
4. The product of $15 \times \frac{1}{5}$ is ——.
5. The product of $15 \times 2\frac{1}{5}$ is ——.
6. The quotient of $2\frac{2}{5} \div \frac{2}{5}$ is ——.
7. The quotient of $2\frac{2}{5} \div 2$ is ——.
8. The sum of two numbers is 46; one of the numbers is 16; the other number is ——.
9. The difference of two numbers is 8; the smaller number is 9; the larger number is ——.
10. The product of two numbers is 45; one of the numbers is 5; the other number is ——.
11. One year and 11 months are —— months.

$$12 + 10 + 1 =$$

12. One minute and 13 seconds are —— seconds.

$$60 + 10 + 3 =$$

13. Twenty-four inches are —— feet.
14. Thirty-six inches are —— feet or —— yard.
15. One half yard is 1 foot and —— inches.
16. One yard is —— inches.

			Multiply:
a. $\$2.40 \times 5$	*b.* $\$2.40 \times \frac{1}{2}$		*m.*
c. $\$3.60 \times 5$	*d.* $\$3.60 \times \frac{1}{2}$		$2.40
e. $\$4.80 \times 5$	*f.* $\$4.80 \times \frac{1}{2}$		$5\frac{1}{2}$
g. $\$3.90 \times 5$	*h.* $\$3.90 \times \frac{1}{2}$		*n.*
i. $\$6.50 \times 5$	*j.* $\$6.50 \times \frac{1}{2}$		$5.70
k. $\$5.70 \times 5$	*l.* $\$5.70 \times \frac{1}{2}$		$5\frac{1}{2}$

1. From the first day of February to the first day of March (common year) it is ——— days. This is exactly ——— weeks. Hence if the first day of February is Thursday, the first day of March is ———. *In a leap year the first day of March is one day later in the week than the first day of February.*

2. February 1, 1905, was Wednesday. On what day of the week was March 1, of the same year?

3. Two thirds of 21 days are ——— days.

4. Twenty days are 2 thirds of ——— days.

5. Five days are what part of 20 days?

6. After spending 1 third of his money for a ball, a boy had 20 cents remaining. How much did the ball cost?

a. After spending 1 third of his money for a horse, a man had $260 remaining. How much did the horse cost?

7. One third of the chickens in a certain flock were white Wyandottes; 2 thirds were Plymouth Rocks. There were 20 Plymouth Rocks. How many Wyandottes?

b. One third of the pupils in a certain school were boys; 2 thirds were girls. There were 86 girls. How many boys? How many pupils?

8. 24 quarts are how many pecks? $24 \div 8 =$

c. 32 qt. ÷ 8 qt. *d.* 336 qt. ÷ 8 qt.

e. 2648 ÷ 8 *f.* 1928 ÷ 8

1. Build a 4-inch cube with 1-inch cubes. How many 1-inch cubes in the first layer? how many in the second layer? how many in the third layer? how many in the fourth layer? how many in all?

2. To find the sum of 4 16's without a pencil, think that there are 4 tens and 4 sixes. 4 tens are ——. 4 sixes are ——. 40 and 24 are ——.

3. In 13 there are 2 5's and ——.

4. In 14 there are —— fours and ——.

5. In 15 there are —— sixes and ——.

6. At 20¢ a gallon, 8 quarts of milk cost —— cents.

a. At $3.50 a gallon, 16 quarts of varnish will cost how much?

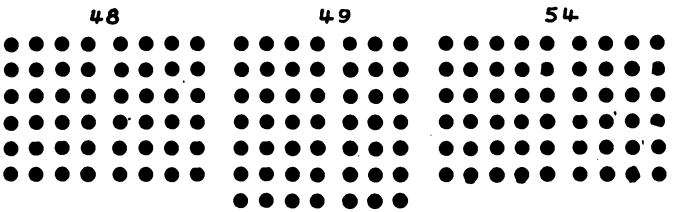
7. A bushel of potatoes weighs 60 lb.; 2 bushels weigh —— lb.

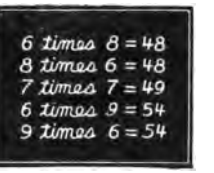
b. A bushel of clover seed weighs 60 lb. 5 bushels of clover seed weigh how many pounds?

8. Two dozen eggs cost 32¢. How much did 1 dozen cost?

c. Three dozen eggs cost 48¢. How much did 1 dozen cost?

d. $\frac{1}{5}$ of 225 yd.	*e.* 235 yd. ÷ 5
f. $\frac{1}{5}$ of 340 yd.	*g.* 345 yd. ÷ 5
h. $\frac{1}{5}$ of 620 yd.	*i.* 630 yd. ÷ 5
j. $\frac{1}{5}$ of 720 yd.	*k.* 750 yd. ÷ 5
l. $\frac{1}{5}$ of 800 yd.	*m.* 810 yd. ÷ 5





1. Six times 8 are ——.
2. Seven times 7 are ——.
3. Six times 9 are ——.
4. Eight times 6 are ——.
5. Nine times 6 are ——. 48 is —— 8's.
6. 54 is —— 9's. 49 is —— 7's.
7. Forty-eight quarts are —— pecks.
8. Forty-nine days are —— weeks.
9. Fifty days are —— weeks and —— day.
10. Beginning with 9 add by 9's to 54.

Add:

a	*b*	*c*	*d*	
$15\frac{1}{12}$	143	$24.20	213	*Multiply:*
14	224	$30.05	213	*e*
21	352	$21.23	213	213
23	103	$34.22	213	9
32	220	$11.51	213	
$35\frac{1}{3}$	300	$13.03	213	*f*
24	125	$22.22	213	213
31	236	$31.12	213	8
22	521	$12.20	213	

1. Seven weeks and 2 days are —— days.

2. Seven weeks and 5 days are —— days.

3. At 6¢ a quart, 8 quarts of milk cost —— cents; 9 quarts cost —— cents.

4. Mary's mother has a rug that is 7 feet square. The perimeter of the rug is —— feet. The area of the rug is —— square feet.

5. I am thinking of an orchard in which there are 6 rows of trees. In each row there are 9 trees. How many trees in the orchard?

6. Mr. George pays 1 dollar a day for his board. How much will he pay for board for 7 weeks and 1 day?

7. Jane's flower bed was 9 ft. long and 6 ft. wide. Its area was —— square feet.

a. What is the area of a bed 31 ft. long and 8 ft. wide?

8. What is the perimeter of a bed 10 ft. long and 2 ft. wide?

b. What is the perimeter of a bed 35 ft. long and 12 ft. wide?

c. From 5320 subtract 2180.

d. From 6275 subtract 1 half of 648.

e. From 4192 subtract 1 half of 3000.

f. From 8056 subtract the sum of 300 and 400.

g. From 7208 subtract the sum of 320 and 82.

h. From 4000 subtract 234.

Write in figures:

a. Twenty-four dollars and forty-five cents.

b. One hundred thirty-six dollars and twenty cents.

c. Two hundred eight dollars and sixty-two cents.

1. Rex had 25¢; he spent 3 fifths of his money; he then had —— cents.

d. Clark had $10.50; he spent 3 fifths of his money. How much money did he then have?

2. Peter lives $5\frac{1}{2}$ miles east of Omaha; Joseph lives $6\frac{1}{2}$ miles west of Omaha; from Peter's home to Joseph's home it is —— miles.

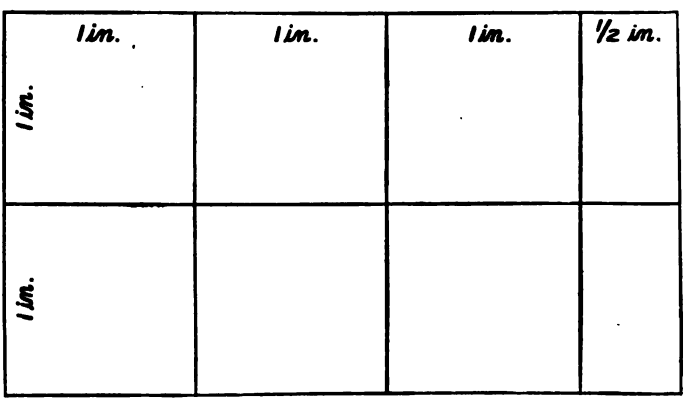
e. Chicago is about 503 miles east of Omaha. Denver is about 538 miles west of Omaha. How many miles from Chicago to Denver?

3. At 6¢ a quart, $2\frac{1}{2}$ quarts of milk cost —— cents.

f. At $4.60 a ton, $2\frac{1}{2}$ tons of coal cost ——.

Find the products:	*For Study*
g. $24.40 multiplied by 6	6 times 1 = 6
h. $24.40 multiplied by $6\frac{1}{2}$	6 times 2 = 12
i. $42.60 multiplied by 6	6 times 3 = 18
j. $42.60 multiplied by $6\frac{1}{2}$	6 times 4 = 24
k. $64.80 multiplied by 6	6 times 5 = 30
l. $64.80 multiplied by $6\frac{1}{2}$	6 times 6 = 36
m. $82.20 multiplied by 6	6 times 7 = 42
n. $82.20 multiplied by $6\frac{1}{2}$	6 times 8 = 48
o. $21.90 multiplied by $6\frac{1}{2}$	6 times 9 = 54

1. Observe the diagram given below. It is an oblong 2 inches by $3\frac{1}{2}$ inches. Think of it as made up of two rows of 1-inch squares with a piece of another square at one end of each row. The piece is —— of a square inch. In each row there are —— and —— square inches. $3\frac{1}{2}$ sq. in. $\times 2 =$ ——. The area of an oblong 2 in. by $3\frac{1}{2}$ in. is ——.



2. The area of an oblong $4\frac{1}{2}$ inches by 2 inches is ——.

3. The perimeter of the oblong described in No. 1 is —— inches.

4. The perimeter of the oblong described in No. 2 is —— inches.

a. 336 da. ÷ 6 da. *b.* 312 da. ÷ 6 da.
c. 432 ÷ 6 *d.* 546 ÷ 6
e. 222 ÷ 6 *f.* 384 ÷ 6

1. Look at a foot rule. *One inch is one twelfth of a foot.*

2. Two inches are —— —— of a foot.

3. One sixth and 1 twelfth are —— twelfths.

4. Five sixths of a foot are —— inches.

5. Five sixths and 1 twelfth are —— twelfths.

6. Five sixths less 1 twelfth are —— twelfths.

7. Two times 3 twelfths are —— twelfths.

8. Two times 4 twelfths are —— twelfths.

9. One half is —— twelfths.

10. One half and 1 twelfth are —— twelfths.

11. One half less 1 twelfth is —— twelfths.

12. One twelfth is contained in 1 half —— times. Two twelfths are contained in 1 half —— times. One sixth is contained in 1 half —— times.

13. One half of 1 sixth is —— ——th.

14. One sixth of 12 cents is —— cents.

15. Five sixths of 12 cents are —— cents.

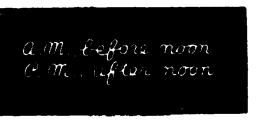
a. One fifth of $ 6.20	*b.* 2 fifths of $ 6.20
c. One fifth of $ 8.40	*d.* 2 fifths of $ 8.40
e. One fifth of $ 9.30	*f.* 2 fifths of $ 9.30
g. One fifth of $10.80	*h.* 2 fifths of $10.80
i. One fifth of $12.10	*j.* 2 fifths of $12.10
k. One fifth of $15.50	*l.* 2 fifths of $15.50

1. One inch is —— —— of a foot.
2. Two inches are 1 ——th of a foot.
3. Three inches are 1 ——th of a foot.
4. Four inches are 1 —— of a foot.
5. Five inches are —— —— of a foot.
6. Six inches are 1 —— of a foot.
7. Seven inches are —— —— of a foot.
8. Eight inches are 2 —— of a foot.
9. Nine inches are 3 —— of a foot.
10. Ten inches are 5 —— of a foot.
11. Eleven inches are —— —— of a foot.
12. Thirteen inches are —— and —— —— feet.
13. Fifteen inches are —— and —— —— feet.
14. $\frac{1}{3}$ of a foot + $\frac{1}{12}$ of a foot = $\frac{1}{3}$ + $\frac{1}{12}$ =
15. $\frac{1}{3}$ of a foot − $\frac{1}{12}$ of a foot = $\frac{1}{3}$ − $\frac{1}{12}$ =
16. $\frac{5}{12}$ of a foot × 2 = $\frac{5}{12}$ × 2 =
17. $1\frac{1}{6}$ feet ÷ $\frac{1}{6}$ of a foot = $1\frac{1}{6}$ ÷ $\frac{1}{6}$ =
18. $6\frac{1}{3}$ feet ÷ 2 = $6\frac{1}{3}$ ÷ 2 =

Add:

a	*b*	*c*	*d*	*i*
$324\frac{1}{3}$	356	$35.20	45.2	45
246	245	$46.50	34.5	45
$153\frac{1}{12}$	721	$31.70	26.1	45
				45
e	*f*	*g*	*h*	45
$273\frac{1}{6}$	721	$30.30	36.3	45
230	362	$ 7.25	47.5	45
$344\frac{5}{12}$	517	$22.50	24.6	45

1. From 10 o'clock A.M. to 2 o'clock P.M. it is —— hours.



2. From 9:30 A.M. to 1:30 P.M. it is —— hours.

3. From 2:30 P.M. to 4:45 P.M. it is —— hours and —— minutes.

Review if necessary as suggested on page 127.

4. $5\frac{1}{2}$ ft. + $2\frac{1}{6}$ ft. means ——. $5\frac{1}{2} + 2\frac{1}{6} =$

5. $4\frac{1}{2}$ ft. − $1\frac{1}{6}$ ft. means ——. $4\frac{1}{2} - 1\frac{1}{6} =$

6. $3\frac{1}{2}$ ft. × 2 means ——. $3\frac{1}{2} \times 2 =$

7. $4\frac{1}{2}$ ft. × $\frac{1}{2}$ means ——. $4\frac{1}{2} \times \frac{1}{2} =$

8. 6 ft. × $2\frac{1}{2}$ means ——. $6 \times 2\frac{1}{2} =$

9. 6 ft. ÷ $1\frac{1}{2}$ ft. means ——. $6 \div 1\frac{1}{2} =$

10. $6\frac{1}{2}$ ft. ÷ 2 means ——. $6\frac{1}{2} \div 2 =$

To multiply a number by 1 fourth is to find 1 fourth of the number. To multiply a number by $2\frac{1}{4}$ is to find 2 times the number plus $\frac{1}{4}$ of the number.

11. Multiply each of the following first by $\frac{1}{4}$ and then by $2\frac{1}{4}$: 8, 12, 20, $40.

12. At 40¢ a yard, how much will $2\frac{1}{4}$ yards of ribbon cost?

a. From 8106 subtract 1508.

b. From 7250 subtract 1 half of 4160.

c. From 6802 subtract 1 half of 6812.

d. From 5000 subtract the sum of 400 and 500.

e. From 6000 subtract the sum of 240 and 320.

1. The sum of $5\frac{1}{2}$ and $5\frac{1}{12}$ is ——.
2. The difference of $5\frac{1}{2}$ and $2\frac{1}{12}$ is ——.
3. The product of $5\frac{1}{2} \times 3$ is ——.
4. The product of $20 \times \frac{1}{4}$ is ——.
5. The product of $20 \times 2\frac{1}{4}$ is ——.
6. The quotient of $6\frac{3}{4} \div \frac{3}{4}$ is ——.
7. The quotient of $6\frac{1}{4} \div 2$ is ——.
8. The sum of two numbers is 45; one of the numbers is 15; the other number is ——.
9. The difference of two numbers is 10; the larger number is 50; the smaller number is ——.
10. The product of two numbers is 54; one of the numbers is 6; the other number is ——.
11. Two feet and 11 inches are —— inches.

$$24 + 10 + 1 =$$

12. One hour and 17 minutes are —— minutes.

$$60 + 10 + 7 =$$

13. One half hour and 19 minutes are —— minutes.

$$30 + 10 + 9 =$$

14. Forty-eight pints are —— quarts. 24 quarts are —— gallons. 6 gallons are —— pints.

		Multiply:
a. 282×6	*b.* $282 \times \frac{1}{2}$	*m.*
c. 349×6	*d.* $349 \times \frac{1}{2}$	282
e. 257×6	*f.* $257 \times \frac{1}{2}$	$6\frac{1}{2}$
g. 183×6	*h.* $183 \times \frac{1}{2}$	*n.*
i. 700×6	*j.* $700 \times \frac{1}{2}$	349
k. 806×6	*l.* $806 \times \frac{1}{2}$	$6\frac{1}{2}$

1. From the first day of March to the first day of April it is —— days. This is —— weeks and —— days. Hence if the first day of March is Tuesday, the first day of April is ——. *The first day of April is always three days later in the week than the first day of March.*

2. March 1, 1905, was Wednesday. On what day of the week was April 1 of the same year?

3. Three fourths of 12 dollars are —— dollars.

4. Twelve dollars are 3 fourths of —— dollars.

5. Nine dollars are what part of 27 dollars?

6. Eighteen dollars are what part of 27 dollars?

7. After spending 1 fourth of his money for a tablet, a boy had 15 ¢ remaining. How much did the tablet cost? How much money did he have before buying the tablet?

a. After spending 1 fourth of his money for a harness, a man had $60 remaining. How much did the harness cost? How much money did he have before buying the harness?

8. At $6 a cord, how many cords of wood can be bought for $54? $54 \div 6 =$

b. 252 dollars ÷ 6 dollars

c. $255 ÷ $6

d. 372 dollars ÷ 6 dollars

e. $375 ÷ $6

f. 492 dollars ÷ 6 dollars

g. $495 ÷ $6

h. 552 dollars ÷ 6 dollars

i. $555 ÷ $6

j. 264 dollars ÷ 6 dollars

k. $265 ÷ $6

l. 345 dollars ÷ 6 dollars

m. $397 ÷ $6

1. Imagine that you build a 5-inch cube with 1-inch cubes. How many 1-inch cubes in the first layer? how many in the second layer? how many layers? how many 1-inch cubes in all?

2. To find the sum of 4 26's without using a pencil, think that there are 4 20's and 4 6's. 4 20's are ——. 4 6's are ——. 80 and 24 are ——.

3. In 22 there are —— 6's and ——.

4. In 22 there are —— 5's and ——.

5. In 22 there are —— 7's and ——.

6. In 22 there are —— 4's and ——.

7. In 22 there are —— 10's and ——.

8. At 20¢ a gallon, 12 quarts of milk cost —— cents.

a. At $2.75 a gallon, 12 quarts of varnish cost ——.

9. A bushel of shelled corn weighs 56 pounds; a half bushel weighs —— pounds. To find 1 half of 56 without using a pencil, think that 1 half of 50 is ——, and 1 half of 6 is ——. 25 and 3 are ——.

b. What is the weight of $2\frac{1}{2}$ bushels of shelled corn?

c. One fifth of $7.30

d. 3 fifths of $7.30

e. One fifth of $8.10

f. 3 fifths of $8.10

g. One fifth of $9.00

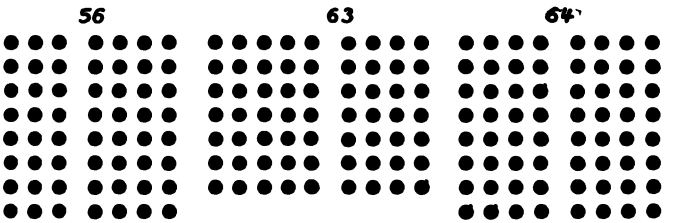
h. 3 fifths of $9.00

i. One fifth of $7.25

j. 3 fifths of $7.25

k. One fifth of $6.45.

l. 4 fifths of $6.45



1. Seven times 8 are ——.
2. Seven times 9 are ——.
3. Eight times 8 are ——.
4. Eight times 7 are ——.
5. Nine times 7 are ——.

6. 63 is —— 9's. 56 is —— 7's. 64 is —— 8's.
7. Fifty-six quarts are —— pecks.
8. Seven pecks are —— bushel and —— pecks.
9. Sixty-three days are —— weeks.
10. Sixty-three square feet are —— square yards.
11. Beginning with 7 add by 7's to 63.
12. Eight 7's are ——. 9 7's are ——.

Add:

a	*b*	*c*	*d*	*Multiply:*
$24\frac{1}{12}$	256	$31.25	325	*e*
13	142	$21.22	325	325
$15\frac{1}{6}$	327	$15.71	325	7
22	125	$11.42	325	
$33\frac{1}{12}$	243	$46.00	325	*f*
$31\frac{1}{6}$	231	$31.00	325	325
16	300	$41.00	325	8

1. Eight weeks and 3 days are —— days.

2. Nine weeks and 2 days are —— days.

3. Mrs. Hall has a rug that is 8 feet square. The perimeter of the rug is —— feet. The area of the rug is —— square feet.

4. A certain bath room is 10 feet long and 5 feet wide. How many feet around it? How many yards of border will be required for papering this room?

a. A room is 18 feet long and 14 feet wide. How many yards of border required for papering this room?

5. Mr. Miller pays one dollar a day for his board. How much must he pay for board for 9 weeks and 1 day?

6. How far around a flower bed that is $4\frac{1}{2}$ feet long and $3\frac{1}{2}$ feet wide?

b. What is the perimeter of a bed that is $32\frac{1}{2}$ feet long and $3\frac{1}{2}$ feet wide?

7. When milk costs 7¢ a quart, for 63¢ I can buy —— quarts.

c. From 1000 subtract 243.
d. 1000 − 324
e. From 2000 subtract 314.
f. 2000 − 423
g. From 3000 subtract 142.
h. 3000 − 241
i. From 4000 subtract 222.
j. 4000 − 333
k. From 5000 subtract 500.
l. 5000 − 550
m. From 6000 subtract 600.
n. 6000 − 660
o. From 7000 subtract 700.
p. 7000 − 760

Write in figures:

a. Three thousand one hundred forty.

b. Three thousand forty.

c. Three thousand four.

1. Alice had 35¢; she spent 4 fifths of her money; she then had —— cents.

d. Harry had $12.75; he spent 4 fifths of his money. How much money did he then have?

e. How much money did Harry spend?

2. Twenty degrees below the freezing point is how many degrees above zero?

3. Joseph lives 7 miles south of Champaign. David lives 5 miles south of Joseph's home. How many miles from Champaign does David live?

f. Champaign is 128 miles south of Chicago. Cairo is 237 miles south of Champaign. How many miles from Chicago to Cairo?

Find the products:

g. 324 multiplied by $7\frac{1}{2}$

h. 243 multiplied by $7\frac{1}{2}$

i. 142 multiplied by $7\frac{1}{2}$

j. 431 multiplied by $7\frac{1}{2}$

k. 252 multiplied by $7\frac{1}{2}$

l. 165 multiplied by $7\frac{1}{2}$

m. 271 multiplied by $7\frac{1}{2}$

n. 182 multiplied by $7\frac{1}{2}$

o. 219 multiplied by $7\frac{1}{2}$

For Study

7 times 1 = 7
7 times 2 = 14
7 times 3 = 21
7 times 4 = 28
7 times 5 = 35
7 times 6 = 42
7 times 7 = 49
7 times 8 = 56
7 times 9 = 63

Review page 144.

1. The area of an oblong 7 inches by 8 inches is —— square inches.

2. The perimeter of an oblong 7 inches by 8 inches is —— inches.

3. I am thinking of an oblong whose area is 54 square inches. Its width is 6 inches. Its length is —— inches.

a. I am thinking of a long, narrow flower bed whose area is 245 square feet. It is 7 feet wide. How long is it?

4. When hay is $7 a ton, for $63 I can buy —— tons.

b. When hay is $7 a ton, how many tons can I buy for $252?

5. If 3 melons cost 27¢, at the same rate 5 melons will cost —— cents.

c. If 3 loads of wood cost $12.60, how much will 5 loads cost at the same rate?

6. If half a yard of ribbon costs 5¢, at the same rate 9 yards will cost —— cents.

d. If half a barrel of apples costs $1.25, how much will 7 barrels cost at the same rate?

e. 154 days ÷ 7 days	*f.* 224 ÷ 7
g. 371 days ÷ 7 days	*h.* 434 ÷ 7
i. 497 days ÷ 7 days	*j.* 161 ÷ 7
k. 231 days ÷ 7 days	*l.* 385 ÷ 7

1. Think of a foot rule. One third of a foot is —— inches. One fourth of a foot is —— inches. 4 inches plus 3 inches are 7 inches. 1 third plus 1 fourth are —— twelfths.

$$\tfrac{1}{3}+\tfrac{1}{4}=\tfrac{\quad}{12}$$

2. Two thirds and 1 fourth are —— twelfths.

$$\tfrac{2}{3}+\tfrac{1}{4}=\tfrac{\quad}{12}$$

3. One third less 1 fourth is —— twelfths.

$$\tfrac{1}{3}-\tfrac{1}{4}=$$

4. Two thirds less 1 fourth are —— twelfths.

$$\tfrac{2}{3}-\tfrac{1}{4}=$$

5. Three fourths and 1 third are —— twelfths, or 1 whole and —— twelfth.

$$\tfrac{3}{4}+\tfrac{1}{3}=$$

6. Three fourths and 2 thirds are —— twelfths, or 1 and —— twelfths.

$$\tfrac{3}{4}+\tfrac{2}{3}=$$

7. I can change thirds and fourths to twelfths

$\frac{1}{3}=$ —— twelfths. $\frac{1}{4}=$ —— twelfths.
$\frac{2}{3}=$ —— twelfths. $\frac{3}{4}=$ —— twelfths.

a. 1 fifth of 320 bushels *b.* $\frac{2}{5}$ of 320 bu.
c. 1 fifth of 460 feet *d.* $\frac{2}{5}$ of 460 ft.
e. 1 fifth of 620 gallons *f.* $\frac{4}{5}$ of 620 gal.
g. 1 fifth of 745 dollars *h.* $\frac{2}{5}$ of $745
i. 1 fifth of 835 yards *j.* $\frac{2}{5}$ of 835 yd.
k. 1 fifth of 725 barrels *l.* $\frac{3}{5}$ of 725 bbl

1. $\frac{1}{4}$ of a foot + $\frac{1}{6}$ of a foot = $\frac{1}{4} + \frac{1}{6} =$
2. $\frac{1}{4}$ of a foot − $\frac{1}{6}$ of a foot = $\frac{1}{4} - \frac{1}{6} =$
3. $\frac{1}{6}$ of a foot × 3 = $\frac{1}{6} \times 3 =$
4. $\frac{1}{6}$ of a foot × $\frac{1}{2}$ = $\frac{1}{6} \times \frac{1}{2} =$
5. $\frac{1}{6}$ of a foot × $3\frac{1}{2}$ = $\frac{1}{6} \times 3\frac{1}{2} =$
6. 2 feet ÷ $\frac{1}{6}$ of a foot = $2 \div \frac{1}{6} =$
7. $\frac{1}{6}$ of a foot ÷ 2 = $\frac{1}{6} \div 2 =$

8. Draw a line $4\frac{1}{4}$ feet long; draw another $2\frac{1}{6}$ feet long; together the lines are —— and —— —— feet long. $4\frac{1}{4} + 2\frac{1}{6} =$

9. Draw a line $4\frac{1}{4}$ feet long; erase from it $2\frac{1}{6}$ feet; the line that is left is —— and —— —— feet long. $4\frac{1}{4} - 2\frac{1}{6} =$

10. The perimeter of a $1\frac{1}{6}$-foot square is —— and —— —— feet. $1\frac{1}{6} + 1\frac{1}{6} + 1\frac{1}{6} + 1\frac{1}{6} =$ $1\frac{1}{6} \times 4 =$

11. Ned had a piece of rope $11\frac{1}{2}$ ft. long; he divided it into 2 equal parts; each part was —— and —— —— feet long. 1 half of 11 is —— ——.

Add:

a	*b*	*c*	*d*	*i*
$243\frac{1}{4}$	542	$27.31	34.1	37
170	3325	$11.15	48.7	37
$362\frac{1}{6}$	569	$36.29	65.4	37
				37
e	*f*	*g*	*h*	37
$127\frac{3}{4}$	565	$54.27	55.3	37
151	408	$ 8.62	44.4	37
$173\frac{1}{6}$	327	$ 9.40	36.8	37

In railroad time tables, the figures denoting time P.M. are sometimes printed in heavier (blacker) type than those denoting time A.M.; thus, 6:24 means 6:24 A.M., and **6:24** means 6:24 P.M.

1. From 9:00 to **4:30** it is —— hours and —— minutes.

2. From **10:00** to 3:15 it is —— hours and —— minutes.

3. From **1:20** to **5:40** it is —— hours and —— minutes.

Review if necessary as suggested on page 127.

4. $5\frac{1}{3}$ ft. $+ 3\frac{1}{4}$ ft. means ——. $5\frac{1}{3} + 3\frac{1}{4} =$
5. $6\frac{1}{3}$ ft. $- 4\frac{1}{4}$ ft. means ——. $6\frac{1}{3} - 4\frac{1}{4} =$
6. $4\frac{1}{3}$ ft. $\times 2$ means ——. $4\frac{1}{3} \times 2 =$
7. $4\frac{1}{3}$ ft. $\times \frac{1}{2}$ means ——. $4\frac{1}{3} \times \frac{1}{2} =$
8. 6 ft. $\times 2\frac{1}{3}$ means ——. $6 \times 2\frac{1}{3} =$
9. $6\frac{1}{2}$ ft. $\times \frac{1}{2}$ means ——. $6\frac{1}{2} \times \frac{1}{2} =$
10. $6\frac{1}{2}$ ft. $\times 2\frac{1}{2}$ means ——. $6\frac{1}{2} \times 2\frac{1}{2} =$
11. 8 ft. $\div \frac{1}{2}$ ft. means ——. $8 \div \frac{1}{2} =$
12. $8\frac{1}{2}$ ft. $\div 2$ means ——. $8\frac{1}{2} \div 2 =$

Subtract:

a	*b*	*c*	*d*	*e*
$82\frac{1}{4}$	378	\$25.47	46.5	1000
$25\frac{1}{6}$	192	\$12.71	21.7	404

f	*g*	*h*	*i*	*j*
75	562	\$37.81	36	5000
$31\frac{1}{2}$	148	\$11.17	14.8	111

1. The sum of $8\frac{1}{3}$ and $4\frac{1}{4}$ is ——.
2. The difference of $8\frac{1}{3}$ and $4\frac{1}{4}$ is ——.
3. The product of $8\frac{1}{3} \times 3$ is ——.
4. The product of $8 \times \frac{3}{4}$ is ——.
5. The product of $8 \times 2\frac{3}{4}$ is ——.
6. The quotient of $8\frac{1}{3} \div \frac{1}{3}$ is ——.
7. The quotient of $8\frac{1}{3} \div 2$ is ——.

8. The sum of two numbers is 26; one of the numbers is 7; the other number is ——.

9. The difference of two numbers is 11; the larger number is 55; the smaller number is ——.

10. The product of two numbers is 63; one of the numbers is 7; the other number is ——.

11. Three yards and 2 feet are —— feet.
12. Three bushels and two pecks are —— pecks.
13. Three hours and 20 minutes are —— minutes.
14. Three feet and 5 inches are —— inches.
15. Three weeks and 6 days are —— days.
16. Twenty-nine inches are —— feet and —— inches.
17. Twenty-nine feet are —— yards and —— feet.

a. 375×7 *b.* $375 \times \frac{1}{2}$

c. 247×7 *d.* $247 \times \frac{1}{2}$

e. 439×7 *f.* $439 \times \frac{1}{2}$

g. 523×7 *h.* $423 \times \frac{1}{2}$

i. 605×7 *j.* $605 \times \frac{1}{2}$

k. 721×7 *l.* $721 \times \frac{1}{2}$

Multiply:

m.

375

$7\frac{1}{2}$

1. From the first day of April to the first day of May it is —— days. This is —— weeks and —— days. Hence if the first day of April is Monday, the first day of May is ——. *The first day of May is always two days later in the week than the first day of April.*

2. April 1, 1905, was Saturday. On what day of the week was May 1 of the same year?

3. Three fifths of 15 dollars are —— dollars.

4. Fifteen dollars are 3 fifths of —— dollars.

5. Ten dollars are what part of 30 dollars?

6. Twenty dollars are what part of 30 dollars?

7. After spending 1 fifth of his money for a ball, a boy had 40 cents remaining. How much did the ball cost? How much money did he have before buying the ball?

a. After spending 1 fifth of his money for a carriage, a man had $440 remaining. How much did the carriage cost? How much money did he have before buying the carriage?

8. At $7 a ton, how many tons of coal can be bought for $56? $56 ÷ $7 =

b. 1540 dollars ÷ 7 dollars

c. $1547 ÷ $7

d. 1610 dollars ÷ 7 dollars

e. $1617 ÷ $7

f. 1750 dollars ÷ 7 dollars

g. $1757 ÷ $7

h. 1820 dollars ÷ 7 dollars

i. $1827 ÷ $7

j. 1960 dollars ÷ 7 dollars

k. $1974 ÷ $7

1. Imagine that you dig a hole in the ground 3 ft. square and 7 ft. deep. How many cubic feet of earth must be removed in digging the first foot? in digging the first 2 feet? in digging the first 3 feet? in digging the first 4 feet? in digging the hole 3 ft. square and 7 ft. deep?

2. To find the sum of 4 27's without using a pencil, think that there are 4 25's and 4 2's. 4 25's are ——. 4 2's are ——. $100+8=$

3. In 23 there are —— 6's and ——.

4. In 23 there are —— 5's and ——.

5. In 23 there are —— 7's and ——.

6. At 24 cents a gallon, 7 quarts of milk cost —— ¢.

a. At $2.40 a gallon, how much will 7 quarts of varnish cost?

7. A bushel of potatoes weighs 60 pounds; a half bushel weighs —— pounds; $1\frac{1}{2}$ bushels weigh —— pounds; 2 bushels weigh —— pounds; $2\frac{1}{2}$ bushels weigh —— pounds.

b. What is the weight of $9\frac{1}{2}$ bushels of potatoes?

c. One fifth of 1240 pounds

d. $\frac{2}{5}$ of 1240 lb.

e. One fifth of 3170 pounds

f. $\frac{3}{5}$ of 3170 lb.

g. One fifth of 4080 pounds

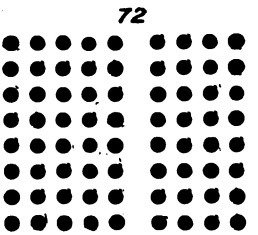
h. $\frac{4}{5}$ of 4080 lb.

i. One fifth of 5105 pounds

j. $\frac{3}{5}$ of 5105 lb.

k. One fifth of 6250 pounds

l. $\frac{2}{5}$ of 6250 lb.



1. Eight times 9 are ——.
2. Eight times 8 are ——.
3. Nine times 8 are ——.
4. 72 is —— 8's. 72 is —— 9's.
5. Beginning with 8, add by 8's to 72.
6. Eight 9's are ——. 9 8's are ——.
7. In half a pound there are —— ounces. In 1 pound there are —— ounces. In $1\frac{1}{2}$ pounds there are —— ounces. In 2 pounds there are —— ounces. In $2\frac{1}{2}$ pounds there are —— ounces.

Add:

a	*b*	*c*	*d*
$31\frac{1}{12}$	332	$ 39.21	431
24	527	$ 46.59	431
$37\frac{1}{6}$	231	$ 24.38	431
42	146	$ 31.25	431
$25\frac{1}{3}$	208	$ 52.64	431
26	390	$ 18.17	431
$52\frac{1}{4}$	150	$ 19.20	431
38	300	$ 30.40	431
55	209	$ 51.11	431

Multiply:

e	*f*
431	432
9	8

1. Eight square yards are —— square feet.

2. Nine pecks are —— quarts.

3. I am thinking of a carpet that is 9 ft. long and 8 ft. wide. Its perimeter is —— feet. Its area is —— square feet.

4. A certain bath room is 10 ft. long and 6 ft. wide. How many feet around it? How many yards of border will be required for papering this room?

a. A room is 19 ft. long and 14 ft. wide. How many yards of border will be required for papering this room?

5. How far around a flower bed that is $5\frac{1}{2}$ ft. long and $4\frac{1}{2}$ ft. wide?

b. What is the perimeter of a bed that is $24\frac{1}{2}$ ft. long and $5\frac{1}{2}$ ft. wide?

6. When milk costs 8¢ a quart, for 72¢ I can buy —— quarts; for 80¢ I can buy —— quarts; 2 gallons would cost ——¢; $2\frac{1}{2}$ gallons would cost ——¢.

Subtract:

c	*d*	*e*	*f*	*g*
$75\frac{1}{3}$	564	$35.06	54.3	5000
$26\frac{1}{12}$	191	$18.52	12.8	303

h	*i*	*j*	*k*	*l*
85	734	$55.40	54	4000
$41\frac{1}{3}$	118	$23.75	12.7	234

Write in figures:

a. Twenty-three thousand one hundred forty.

b. Fifty-four thousand two hundred sixty.

c. Seventy-five thousand six hundred fifty.

d. Find the sum of the numbers in *a*, *b*, *c*.

1. If a man's wages are $40 for 5 weeks, in one week he earns —— dollars.

e. If a man's wages are $215 for 5 months, how much does he earn in one month?

2. If 6 barrels of flour are worth $30, 2 barrels are worth —— dollars.

f. If 6 acres of land are worth $264, how much are 2 acres worth?

3. Seventy-two quarts are —— pecks.

g. How many pecks are 664 quarts?

4. Eighty pints are —— gallons.

h. How many gallons are 440 pints?

Find the products:

i. 123 multiplied by 8

j. 234 multiplied by 8

k. 345 multiplied by 8

l. 456 multiplied by 8

m. 567 multiplied by 8

n. 678 multiplied by 8

o. 789 multiplied by 8

p. 890 multiplied by 8

q. 809 multiplied by 8

For Study

8 times 1 = 8
8 times 2 = 16
8 times 3 = 24
8 times 4 = 32
8 times 5 = 40
8 times 6 = 48
8 times 7 = 56
8 times 8 = 64
8 times 9 = 72

1. 5 is contained in 11 —— times and —— over.
2. 5 is contained in 11 —— and —— —— times.
3. 5 is contained in 17 —— times and —— over.
4. 5 is contained in 17 —— and —— —— times.
5. 5 is contained in 23 —— times and —— over.
6. 5 is contained in 23 —— and —— —— times.
7. 4 is contained in 13 —— times and —— over.
8. 4 is contained in 13 —— and —— —— times.
9. 4 is contained in 19 —— times and —— over.
10. 4 is contained in 19 —— and —— —— times.
11. 3 is contained in 22 —— times and —— over.
12. 3 is contained in 22 —— and —— ——times.
13. 3 is contained in 29 —— times and —— over.
14. 3 is contained in 29 —— and —— —— times.
15. 2 is contained in 11 —— times and —— over.
16. 2 is contained in 11 —— and —— —— times.
17. When hay is $8 a ton, for $72 I can buy —— tons.

a. When hay is $8 a ton, how many tons can I buy for $760?

b. 176 dollars ÷ 8 dollars
c. 256 ÷ 8
d. 184 dollars ÷ 8 dollars
e. 264 ÷ 8
f. 192 dollars ÷ 8 dollars
g. 272 ÷ 8
h. 200 dollars ÷ 8 dollars
i. 280 ÷ 8
j. 216 dollars ÷ 8 dollars
k. 296 ÷ 8
l. 224 dollars ÷ 8 dollars
m. 304 ÷ 8

1. Add 1 third and 1 fourth.

I can change thirds and fourths to ——ths.

1 third is —— twelfths.

1 fourth is —— twelfths

—— twelfths and —— twelfths are —— twelfths.

$\frac{1}{3} = \frac{\quad}{12}$ $\frac{1}{4} = \frac{\quad}{12}$ $\frac{4}{12} + \frac{3}{12} = \frac{\quad}{12}$

2. Add 1 fourth and 1 sixth.

(Change fourths and sixths to twelfths.)

3. Add 2 thirds and 1 fourth.

4. Add 3 fourths and 1 third.

5. Add 3 fourths and 1 sixth.

6. Add 5 sixths and 1 fourth.

7. Add 2 thirds and 3 fourths.

8. Add $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{6}$, and $\frac{1}{12}$.

9. One third of a foot and 1 fourth of a foot and 1 sixth of a foot and 1 twelfth of a foot are —— twelfths of a foot.

$\frac{10}{12} = \frac{\quad}{6}$

a. Find 1 fifth of 1266 dollars. *b*. $\frac{2}{5}$ of $1266

c. Find 1 fifth of 2341 dollars. *d*. $\frac{2}{5}$ of $2341

e. Find 1 fifth of 1347 dollars. *f*. $\frac{2}{5}$ of $1347

g. Find 1 fifth of 3262 dollars. *h*. $\frac{2}{5}$ of $3262

i. Find 3 fifths of 8320 dollars.

j. Find 4 fifths of 2565 dollars.

k. Find 2 fifths of 3460 dollars.

l. Find 3 fifths of 4105 dollars.

m. Find 2 fifths of 7245 dollars

1. From 1 third subtract 1 fourth.

I can change thirds and fourths to —— ths.

1 third is —— twelfths.

1 fourth is —— twelfths.

—— twelfths less —— twelfths = ——.

$\frac{1}{3} = \frac{\quad}{12}$ $\frac{1}{4} = \frac{\quad}{12}$ $\frac{4}{12} - \frac{3}{12} = \frac{\quad}{12}$

2. From 1 fourth subtract 1 sixth. $\frac{1}{4} - \frac{1}{6} = \frac{\quad}{12}$
3. From 2 thirds subtract 1 fourth. $\frac{2}{3} - \frac{1}{4} = \frac{\quad}{12}$
4. From 3 fourths subtract 1 third. $\frac{3}{4} - \frac{1}{3} = \frac{\quad}{12}$
5. From 3 fourths subtract 1 sixth. $\frac{3}{4} - \frac{1}{6} = \frac{\quad}{12}$
6. From 5 sixths subtract 1 fourth. $\frac{5}{6} - \frac{1}{4} = \frac{\quad}{12}$
7. From 3 fourths subtract 2 thirds. $\frac{3}{4} - \frac{2}{3} = \frac{\quad}{12}$
8. From 5 sixths subtract 3 fourths. $\frac{5}{6} - \frac{3}{4} = \frac{\quad}{12}$
9. From the sum of $\frac{1}{3}$ and $\frac{1}{4}$ subtract $\frac{1}{12}$.

$$\frac{1}{3} + \frac{1}{4} - \frac{1}{12} = \frac{\quad}{12}$$

$$\frac{6}{12} = \frac{\quad}{2}$$

Add:

a	*b*	*c*	*d*
$42\frac{1}{5}$	524	$51.00	324
36	346	$27.20	324
$33\frac{1}{10}$	251	$34.00	324
24	901	$56.30	324
81	324	$72.60	324
$45\frac{1}{5}$	151	$54.00	324
37	234	$64.00	324
$63\frac{1}{10}$	175	$83.26	324
72	185	$46.20	324

Multiply:

e
324
9

f
324
8

1. From 3:30 to 1:30 it is —— hours.

2. A train leaves Chicago at 9:30 and arrives in Omaha at 11:30 the next day. How many hours required to make the trip?

Review page 96 and the pages suggested for review on page 127.

3. $.8 + .5$ means ——. $.8 + .5 =$
4. $1.2 - .5$ means ——. $1.2 - .5 =$
5. $.6 \times 3$ means ——. $.6 \times 3 =$
6. $.6 \times \frac{1}{2}$ means ——. $.6 \times \frac{1}{2} =$
7. $.6 \times 3\frac{1}{2}$ means ——. $.6 \times 3\frac{1}{2} =$
8. $2.4 \div .6$ means ——. $2.4 \div .6 =$
9. $2.4 \div 4$ means ——. $2.4 \div 4 =$

10. .8 multiplied by $\frac{1}{2}$ means, *find* 1 *half of* .8. 1 half of .8 is ——.

11. .8 multiplied by $3\frac{1}{2}$ means, *find* 3 *times* .8 *and to this add* 1 *half of* .8. 3 times .8 are —— tenths. 1 half of .8 is —— tenths. 24 tenths and 4 tenths are —— tenths. Write the answer and read in two ways:

Subtract:

a	*b*	*c*	*d*	*e*
$84\frac{1}{5}$	742	\$55.00	75.2	6000
$36\frac{1}{10}$	296	\$12.60	23.9	1010

f	*g*	*h*	*i*	*j*
99	327	\$64.01	38	8000
$43\frac{1}{5}$	129	\$ 3.05	24.7	305

1. The sum of .9 and 1.2 is ——.
2. The difference of 1.5 and .6 is ——.
3. The product of 1.2×2 is ——.
4. The product of $1.2 \times \frac{1}{2}$ is ——.
5. The product of $1.2 \times 2\frac{1}{2}$ is ——.
6. The quotient of $1.5 \div .5$ is ——.
7. The quotient of $1.8 \div 2$ is ——.

8. The sum of two numbers is 1.4; one of the numbers is .6; the other number is ——.

9. The difference of two numbers is .5; the smaller number is .8; the larger number is ——.

10. The product of two numbers is 1.8; one of the numbers is 3; the other number is——.

11. Five yards and 2 feet are —— feet.
12. Five bushels and 2 pecks are —— pecks.
13. Five hours and 20 minutes are —— minutes.
14. Four weeks and 3 days are —— days.
15. Thirty-one days are —— weeks and —— days.
16. Thirty-one feet are —— yards and —— foot.
17. Thirty-one pecks are —— bushels and —— pecks.

a. 346×8	*b.* $346 \times \frac{1}{3}$	*Multiply:*
c. 274×8	*d.* $274 \times \frac{1}{3}$	*k.*
e. 145×8	*f.* $145 \times \frac{1}{3}$	346
g. 412×8	*h.* $412 \times \frac{1}{3}$	$81\frac{1}{3}$
i. 502×8	*j.* $502 \times \frac{1}{3}$	

1. There are 365 days in a common year. How many weeks in a common year?

365 days ÷ 7 days =

a. 52 weeks are how many days?

2. If the first day of January of a common year is Monday, the first day of January of the next year will be 52 weeks and 1 day later; it will be ——.

3. If the 10th of January of a common year is Wednesday, the 10th of January of the next year will be ——.

4. If the first day of February of a common year is Sunday, the first day of February of the next year will be ——.

5. Three fourths of 24 dollars are —— dollars.

6. Twenty-four dollars are 3 fourths of $ ——.

7. Seven dollars are what part of 21 dollars?

8. Fourteen dollars are what part of 21 dollars?

9. After spending 4 fifths of his money for a book, John had 9 cents remaining. How much money did he have before he bought the book? How much did the book cost?

10. At $8 a ton, how many tons of coal can be bought for $72? for $64? for $56?

b. $400 ÷ $8 *c.* $424 ÷ $8 *d.* $428 ÷ $8

e. $432 ÷ $8 *f.* $440 ÷ $8 *g.* $444 ÷ $8

h. $560 ÷ $8 *i.* $568 ÷ $8 *j.* $572 ÷ $8

Review problem 1, page 160.

1. Imagine that you dig a hole in the ground 3 ft. square and 8 ft. deep. How many cubic feet of earth must be removed in digging the first 5 feet? in digging the hole 3 ft. square and 8 ft. deep?

2. To find the sum of 5 34's without using a pencil, think that there are 5 30's and 5 4's. 5 30's are ——. 5 4's are ——. 150 and 20 are ——.

3. Harry rode 45 miles in 5 hours; he rode at the rate of —— miles an hour.

4. James rode 46 miles in 5 hours; he rode at the rate of —— miles an hour.

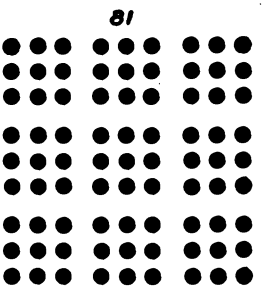
5. Richard rode 48 miles in 5 hours; he rode at the rate of —— miles an hour.

6. William rode 47 miles in 5 hours; he rode at the rate of —— miles an hour.

7. $125 ÷ $5 means, *find how many times* $5 *are contained in* $125. $5 are contained in $125 —— times.

8. $125 ÷ 5 means, *find one fifth of* $125. 1 fifth of $125 is —— dollars.

a. $624 ÷ 2	*b.* $624 ÷ 3	*c.* $624 ÷ 4
d. 960 bu. ÷ 2	*e.* 960 bu. ÷ 3	*f.* 960 bu. ÷ 4
g. 750 ft. × 5	*h.* 750 ft. ÷ 6	*i.* 750 ft. ÷ 7
j. 570 yd. ÷ 5	*k.* 570 yd. ÷ 6	*l.* 570 yd. ÷ 7
m. 720 mi. ÷ 8	*n.* 720 mi. ÷ 9	*o.* 730 mi. ÷ 9



1. One nine is 1 less than 10.

2. Two nines are 2 less than 20 or ——.

9 times 9 = 81

3. 60 is —— 10's. 70 is —— 10's.
4. 80 is —— 10's. 90 is —— 10's.
5. One tenth of 60 is ——. 2 tenths of 60 =
6. One tenth of 70 is ——. 2 tenths of 70 =
7. One tenth of 80 is ——. 3 tenths of 80 =
8. One tenth of 90 is ——. 3 tenths of 90 =
9. One tenth of 50 is ——. 4 tenths of 50 =
10. One tenth of 40 is ——. 5 tenths of 40 =
11. One tenth of 30 is ——. 7 tenths of 30 =

Add:

a	*b*	*c*	*d*	
$27\frac{1}{3}$	342	$31.21	24.3	
25	273	$23.42	24.3	*Multiply:*
$24\frac{2}{3}$	536	$33.22	24.3	*e*
33	124	$44.51	24.3	24.3
$35\frac{1}{3}$	536	$20.06	24.3	5

1. Nine square yards are —— square feet.

2. At 9¢ a quart, 9 quarts of milk cost —— ¢; $2\frac{1}{2}$ gallons cost —— ¢.

3. I am thinking of a rug that is 9 feet square. Its perimeter is —— feet. Its area is —— sq. ft.

4. A certain room is 10 ft. long and 8 ft. wide. How many yards of border will be required for papering this room?

a. A certain room is 21 ft. long and 18 ft. wide. How many yards of border will be required for papering this room?

5. How far around a flower bed that is $5\frac{1}{4}$ feet long and $3\frac{1}{4}$ feet wide?

b. What is the perimeter of a bed that is $27\frac{1}{4}$ feet long and $4\frac{1}{4}$ feet wide?

6. When milk costs 9¢ a quart, for 81¢ I can buy —— quarts; for 90¢ I can buy —— quarts.

Ten quarts are —— and —— —— gallons.

Eleven quarts are —— and —— —— gallons.

Twelve quarts are —— gallons.

Thirteen quarts are —— and —— —— gallons.

Subtract:

c	*d*	*e*	*f*	*g*
$96\frac{3}{4}$	334	$46.00	85.4	5000
$18\frac{1}{2}$	159	$21.35	23.6	38

h	*i*	*j*	*k*	*l*
48	526	$63.25	49	7000
$21\frac{3}{4}$	244	$16.16	31.6	1

Write in figures:

a. One hundred forty-four and three tenths.

b. Four hundred twenty-one and seven tenths.

c. Six hundred fifty-two and eight tenths.

d. Find the sum of the numbers in *a*, *b*, *c*.

1. If a man's wages are $60 for 3 weeks, in 1 week he earns ——— dollars; in 4 weeks he earns ——— dollars; in 5 weeks he earns ——— dollars.

e. If a man's wages are $375 for 5 months, how much does he earn in 1 month? in 6 months?

2. If 3 cakes of soap are worth 15¢, 4 cakes are worth ——— cents.

f. If 3 cords of wood are worth $9.60, how much are 4 cords worth?

3. A farmer sold 9 lb. of butter at 20¢ a pound. How much should he receive for it?

g. Find the cost of 9 lb. of butter at 32¢ a pound.

Find the products:

h. 123 multiplied by 9
i. 234 multiplied by 9
j. 345 multiplied by 9
k. 456 multiplied by 9
l. 567 multiplied by 9
m. 678 multiplied by 9
n. 789 multiplied by 9
o. 890 multiplied by 9
p. 809 multiplied by 9

For Study

9 times 1 = 9
9 times 2 = 18
9 times 3 = 27
9 times 4 = 36
9 times 5 = 45
9 times 6 = 54
9 times 7 = 63
9 times 8 = 72
9 times 9 = 81

1. 6 is contained in 13 —— times and —— over.
2. 6 is contained in 13 —— and —— —— times.
3. 6 is contained in 20 —— times and —— over.
4. 6 is contained in 20 —— and —— —— times.
5. 6 is contained in 27 —— times and —— over.
6. 6 is contained in 27 —— and —— —— times.
7. 6 is contained in 35 —— times and —— over.
8. 6 is contained in 35 —— and —— —— times.
9. 7 is contained in 15 —— times and —— over.
10. 7 is contained in 15 —— and —— —— times.
11. 7 is contained in 23 —— times and —— over.
12. 7 is contained in 23 —— and —— —— times.
13. 7 is contained in 31 —— times and —— over.
14. 7 is contained in 31 —— and —— —— times.
15. 7 is contained in 40 —— times and —— over.
16. 7 is contained in 40 —— and —— —— times.

a. When hay is $9 a ton, how many tons can I buy for $837?

b. 198 dollars ÷ 9 dollars
c. 297 ÷ 9
d. 207 dollars ÷ 9 dollars
e. 216 ÷ 9
f. 225 dollars ÷ 9 dollars
g. 234 ÷ 9
h. 243 dollars ÷ 9 dollars
i. 252 ÷ 9
j. 261 dollars ÷ 9 dollars
k. 279 ÷ 9

1. Add 1 half and 1 seventh.

I can change halves and sevenths to ——ths.

1 half is —— fourteenths.

1 seventh is —— fourteenths.

—— fourteenths and —— fourteenths are —— fourteenths.

$\frac{1}{2} = \frac{\quad}{14}$ $\frac{1}{7} = \frac{\quad}{14}$ $\frac{7}{14} + \frac{2}{14} = \frac{\quad}{14}$

2. Add 1 half and 2 sevenths. $\frac{1}{2} + \frac{2}{7} =$

3. Add 1 half and 3 sevenths. $\frac{1}{2} + \frac{3}{7} =$

4. Add 1 half and 4 sevenths. $\frac{1}{2} + \frac{4}{7} =$

5. Add 1 half and 5 sevenths. $\frac{1}{2} + \frac{5}{7} =$

6. Add 1 half and 1 sixth.

I can change halves to sixths, etc.

7. Add 1 half and 1 fifth.

I can change halves and fifths to ——ths, etc.

8. Add 1 half and 1 fourth. $\frac{1}{2} + \frac{1}{4} =$

9. Add 1 half and 1 third.

I can change halves and thirds to ——ths.

a. Add $\frac{1}{2}$, $\frac{1}{7}$, $\frac{2}{7}$, and $\frac{3}{7}$.

b. Add $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, and $\frac{1}{6}$.

c. 725 dollars ÷ 2

d. 627 dollars ÷ 2

e. 1369 bushels ÷ 2

f. 2523 bushels ÷ 2

g. 1654 feet ÷ 3

h. 2143 feet ÷ 3

i. 1577 yards ÷ 4

j. 2705 yards ÷ 4

k. 1826 miles ÷ 5

l. 2942 miles ÷ 5

1. From 1 half subtract 1 seventh.

I can change halves and sevenths to ——ths.

1 half is —— fourteenths.

1 seventh is —— fourteenths.

—— fourteenths less —— fourteenths are —— fourteenths.

$\frac{1}{2} = \frac{\quad}{14}$ $\frac{1}{7} = \frac{\quad}{14}$ $\frac{7}{14} - \frac{2}{14} = \frac{\quad}{14}$

2. From 1 half subtract 2 sevenths. $\frac{1}{2} - \frac{2}{7} =$

3. From 1 half subtract 3 sevenths. $\frac{1}{2} - \frac{3}{7} =$

4. From 4 sevenths subtract 1 half. $\frac{4}{7} - \frac{1}{2} =$

5. From 1 half subtract 1 sixth.

I can change halves to sixths, etc.

6. From 1 half subtract 1 fifth.

I can change halves and fifths to ——ths, etc.

7. From 1 half subtract 1 third.

I can change halves and thirds to ——ths, etc.

Add:

a	*b*	*c*	*d*
$54\frac{1}{7}$	275	$54.31	24.5
43	341	$25.06	24.5
56	268	$15.27	24.5
$25\frac{1}{2}$	101	$ 6.40	24.5
31	202	$ 3.20	24.5
$43\frac{3}{14}$	303	$ 1.40	24.5
51	140	$ .80	24.5
26	230	$24.60	24.5
35	191	$30.20	24.5

Multiply:

e	*f*
24.5	24.5
9	8

1. $4 \div \frac{2}{3}$. This means, *find how many times* 2 *thirds are contained in* 4. 4 = 12 thirds. 2 thirds are contained in 12 thirds —— times.

$$4 \div \tfrac{2}{3} =$$

I divided 4 yards of ribbon equally among some girls, giving to each girl 2 thirds of a yard. There were —— girls.

2. Divide 6 by $\frac{2}{3}$. (6 = 18 thirds.)

3. Divide 8 by $\frac{2}{3}$. (8 = —— thirds.)

4. $4 \div .2$ This means, *find how many times* 2 *tenths are contained in* 4. 4 = 40 tenths, sometimes written 4.0. 2 tenths are contained in 40 tenths —— times.

$$.2\overline{)4.0\checkmark}$$
$$\underline{}$$
$$20$$

4 acres of land were divided into lots. Each lot contained 2 tenths of an acre. There were —— lots.

5. Divide 6 by .2 $.2\overline{)6.0\checkmark}$

6. Divide 8 by .2

7. Divide 9 by .2

Subtract:

a	*b*	*c*	*d*	*e*
$76\frac{1}{2}$	532	\$70.30	37.9	9000
$34\frac{1}{7}$	166	\$14.06	8.2	999

f	*g*	*h*	*i*	*j*
45	426	\$34.25	45	10000
$24\frac{1}{7}$	128	\$ 1.50	14.8	9999

1. The sum of .8 and .6 is ——.
2. The difference of 1.4 and .8 is ——.
3. The product of $.8 \times 2$ is ——.
4. The product of $.8 \times \frac{1}{2}$ is ——.
5. The product of $.8 \times 2\frac{1}{2}$ is ——.
6. The quotient of $1.8 \div .3$ is ——.
7. The quotient of $1.8 \div 3$ is ——.
8. Two thirds of .6 are —— tenths.
9. .6 are two thirds of —— tenths.
10. .6 are what part of 1.2 (12 tenths)?
11. .4 are what part of 1.2?
12. .8 are what part of 1.2?
13. Multiply 2.1 by 2
14. Multiply 2.4 by 2
15. Multiply 3.2 by 2
16. Multiply 4.2 by 2

a. Multiply 431.2 by 2

$$\begin{array}{r} 431.2 \\ 2 \\ \hline 862.4 \end{array}$$

NOTE. In multiplying with the aid of a pencil, write the decimal point immediately after writing the tenths' figure of the product.

b. Multiply 346.3 by 2
c. 275.4×2
d. Multiply 275.4 by 3
e. 324.6×3
f. Multiply 147.2 by 4
g. 132.3×4
h. Multiply 236.3 by 5
i. 321.4×5
j. Multiply 132.1 by 6
k. 213.2×6
l. Multiply 213.2 by 7
m. 332.4×7

1. There are 366 days in a leap year. How many weeks in a leap year?

366 da. ÷ 7 da.

2. If the number of a year (except the last year of a century) is exactly divisible by 4, it is a leap year.

$$4\overline{)1896}\quad 474 \qquad 4\overline{)1899}\quad 474+ \qquad 4\overline{)1902}\quad 475+ \qquad 4\overline{)1904}\quad 476$$

1896 and 1904 were leap years; 1899 and 1902 were not leap years.

3. Is this year a leap year?

NOTE. The last year of a century, as 1800, 1900, 2000, 2100, etc., is not a leap year unless its number is exactly divisible by 400. The year 1900 was not a leap year. The year 2000 will be a leap year.

4. As stated on page 69 of this book, in a leap year February has 29 days. How many days in February, 1906? in February, 1907? in February, 1908?

5. If the first day of January of a leap year is Monday, the first day of January of the next year will be ——.

a. Divide 624 by .2 *

b. Divide 736 by .2

c. Divide 846 by .2

$$.2\overline{)624.0}\quad 3120$$

* This means, *find how many times .2 are contained in* 624, that is, 6240 tenths (624.0).

1. Imagine a 1-yard cube. It has —— faces. Each face is a 1-yard square. Its entire surface, then, is —— square yards.

2. Imagine that you build a 1-yard cube with 1-foot cubes. How many 1-foot cubes in the first layer? how many in the first two layers? how many 1-foot cubes in all? 3 times 3 times 3 =

3. A cubic yard is equal to —— cubic feet.

4. To find the sum of 5 19's without using a pencil, think that 20 is 1 more than 19; then 5 20's are 5 more than 5 19's. 5 20's are ——. 5 19's are ——.

5. William rode 39 miles in 4 hours; he rode at the rate of —— miles an hour.

6. Edward rode 20 miles in $2\frac{1}{2}$ hours or 5 half hours; he rode at the rate of —— miles in half an hour, or at the rate of —— miles an hour.

7. A train moved 15 miles in 20 minutes. 20 minutes is —— —— of an hour. The train moved at the rate of —— miles an hour.

8. 8.4 ÷ 2 means, *find* 1 *half of* 8.4. 1 half of 8.4 is —— and ——.

$$2\overline{)8.4}$$
$$4.2$$

NOTE. In dividing with the aid of a pencil, write the decimal point immediately after writing the units' figure of the quotient.

a. Divide 356.2 by 2 *b.* 475.4 ÷ 2
c. Divide 573.6 by 2 *d.* 287.8 ÷ 2
e. Divide 679.4 by 2 *f.* 729.4 ÷ 2
g. Divide 929.4 by 2 *h.* 837.6 ÷ 2

1. Four 10's are ——.
2. Four 11's are ——.
3. Four 12's are ——.

4. Five dimes are —— cents.
5. Five elevens are ——.
6. Five feet are —— inches.

7. Six dimes are —— cents.	3 10's =
8. Six elevens are ——.	3 11's =
9. Six dozen eggs are —— eggs.	3 12's =
10. One tenth of 31 is 3.1	2 tenths of 31 =
11. One tenth of 32 is ——.	2 tenths of 32 =
12. One tenth of 33 is ——.	3 tenths of 33 =
13. One tenth of 40 is ——.	2 tenths of 40 =
14. One tenth of 43 is ——.	2 tenths of 43 =
15. One tenth of 25 is ——.	3 tenths of 25 =
16. One tenth of 30 is ——.	2 tenths of 30 =
17. One tenth of 35 is ——.	2 tenths of 35 =
18. One tenth of 27 is ——.	2 tenths of 27 =

19. One tenth of 1000 is ——.
20. One tenth of 2000 is ——.
21. One tenth of 3000 is ——.

Add:

a	*b*	*c*	*d*
$25\frac{3}{7}$	12.1	$25.00	325
24	23.4	$27.40	325
$26\frac{1}{14}$	25.2	$ 2.60	325
22	31.4	$ 3.50	325

1. Ten square yards are —— square feet.

2. At 12¢ a gallon, 4 gallons of kerosene cost —— ¢; 5 gallons cost —— ¢; 6 gallons cost —— ¢.

3. An oblong 1 inch wide and 1 foot long contains —— square inches.

4. An oblong 2 inches wide and 1 foot long contains —— square inches.

5. An oblong 3 inches wide and 1 foot long contains —— square inches.

6. An oblong 4 inches wide and 1 foot long contains —— square inches.

7. An oblong 5 inches wide and 1 foot long contains —— square inches.

8. An oblong 6 inches wide and 1 foot long contains —— square inches.

9. The perimeter of an oblong 6 inches wide and 1 foot long is —— inches or —— feet.

10. Fifty eggs are —— dozen and ——.

11. Forty inches are —— feet and —— inches.

12. Fifty inches are —— feet and —— inches.

Subtract:

a	*b*	*c*	*d*	*e*
$56\frac{1}{2}$	270	\$64.30	34.2	4000
$38\frac{3}{7}$	181	\$15.75	11.8	1111

f	*g*	*h*	*i*	*j*
64	350	\$55.00	84	5000
$31\frac{5}{7}$	156	\$ 3.75	16.7	2222

Write in figures:

a. One hundred six and three tenths.

b. One thousand six and three tenths.

c. One thousand twenty-six and three tenths.

d. Find the sum of the numbers in *a*, *b*, *c*.

1. If 2 quarts of berries are worth 24¢, 5 quarts are worth —— cents.

e. If 2 tons of coal are worth $16.80, how much are 5 tons worth?

2. A farmer sold 12 cords of wood at $6 a cord. How much should he receive for it?

6 12's are ——.

12 6's are ——.

3. If 8 loaves of bread are worth 40¢, 1 loaf is worth ——¢; 12 loaves are worth ——¢.

5 12's are ——.

12 5's are ——.

f. Find the amount of the following bill:

MR. FRANK RANDALL,

Bought of C. W. MARSHALL & Co.

1906 April 1	3 lb. cheese	@ .16		
	5 lb. raisins	@ .08		
	4 lb. coffee	@ .28		
	1 sack flour		1	75
	2 baskets peaches	@ .75		
	2 dozen oranges	@ .25		

1. 8 is contained in 19 —— times and —— over.
2. 8 is contained in 19 —— and —— —— times.
3. 8 is contained in 25 —— times and —— over.
4. 8 is contained in 25 —— and —— —— times.
5. 8 is contained in 50 —— times and —— over.
6. 8 is contained in 50 —— and —— —— times.
7. 8 is contained in 70 —— times and —— over.
8. 8 is contained in 70 —— and —— —— times.
9. 9 is contained in 20 —— times and —— over.
10. 9 is contained in 20 —— and —— —— times.
11. 9 is contained in 31 —— times and —— over.
12. 9 is contained in 31 —— and —— —— times.
13. 9 is contained in 50 —— times and —— over.
14. 9 is contained in 50 —— and —— —— times.
15. 9 is contained in 70 —— times and —— over.
16. When coal is $5 a ton, for $40 I can buy —— tons; for $60, —— tons.

a. At $5 a ton, how many tons of straw can you buy for $2345?

	Short Division	Long Division
b.	$5)$2345 —— times	$5)$2345(469 20 34 30 45 45
c.	$5)$3270	
d.	$5)$5765	

1. Add 1 third and 1 fifth.

I can change thirds and fifths to ——ths.

1 third is —— fifteenths.

1 fifth is —— fifteenths.

—— fifteenths and —— fifteenths are —— fifteenths.

$\frac{1}{3} = \frac{\quad}{15}$ $\frac{1}{5} = \frac{\quad}{15}$ $\frac{5}{15} + \frac{3}{15} = \frac{\quad}{15}$

2. Add 2 thirds and 1 fifth. $\frac{2}{3} + \frac{1}{5} =$

3. Add 1 third and 2 fifths. $\frac{1}{3} + \frac{2}{5} =$

4. Add 1 third and 3 fifths. $\frac{1}{3} + \frac{3}{5} =$

5. Add 2 thirds and 2 fifths. $\frac{2}{3} + \frac{2}{5} =$

6. Add 2 thirds and 4 fifths. $\frac{2}{3} + \frac{4}{5} =$

7. Add 1 half and 5 sixths.

I can change halves to sixths, etc.

8. Add 1 half and 3 fifths.

I can change halves and fifths to ——ths, etc.

9. If 6 barrels of flour cost $30, one barrel costs 1 sixth of $30, or —— dollars.

a. If 6 acres of land cost $2550, how much did 1 acre cost?

	Short Division	Long Division
b.	6)2550 dollars	6)$2550($425
	—— dollars	24
		15
c.	6)3804 dollars	12
		30
d.	6)5706 dollars	30

1. From 1 third subtract 1 fifth.

I can change thirds and fifths to —— ths.

1 third is —— fifteenths.

1 fifth is —— fifteenths.

—— fifteenths less —— fifteenths are —— fifteenths.

$\frac{1}{3} = \frac{\quad}{15}$ $\frac{1}{5} = \frac{\quad}{15}$ $\frac{5}{15} - \frac{3}{15} = \frac{\quad}{15}$

2. From 2 thirds subtract 1 fifth. $\frac{2}{3} - \frac{1}{5} =$

3. From 2 thirds subtract 2 fifths. $\frac{2}{3} - \frac{2}{5} =$

4. From 1 third subtract 1 fifteenth. $\frac{1}{3} - \frac{1}{15} =$

5. From 3 fifths subtract 1 third. $\frac{3}{5} - \frac{1}{3} =$

6. From 5 sixths subtract 1 half.

I can change halves to sixths, etc.

7. From 4 fifths subtract 1 half.

I can change fifths and halves to ——ths, etc.

8. The sum of 3 qt. 1 pt. and 5 qt. 1 pt. is —— ——.

Add:

a	*b*	*c*	*d*
$36\frac{1}{3}$	24.2	$65.30	2 qt. 1 pt.
37	34.2	$ .70	3 qt. 1 pt.
$42\frac{1}{5}$	44.2	$ 6.40	1 qt. 1 pt.
45	21.3	$25.30	2 qt. 1 pt.
51	31.3	$ 7.17	4 qt. 1 pt.
$53\frac{2}{15}$	41.3	$21.36	5 qt. 0 pt.
41	52.4	$43.21	3 qt. 0 pt.
53	53.4	$32.47	2 qt. 1 pt.
27	54.4	$12.85	2 qt. 1 pt.

1. $6 \div \frac{3}{4}$. This means, *find how many times* 3 *fourths are contained in* 6. 6 = —— fourths. 3 fourths are contained in 24 fourths —— times.

$$6 \div \tfrac{3}{4} =$$

I divided 6 yards of ribbon equally among some girls, giving to each girl 3 fourths of a yard. There were —— girls.

2. Divide 9 by $\frac{3}{4}$ (9 = 36 fourths)
3. Divide 3 by $\frac{3}{4}$ (3 = —— fourths)

4. $6 \div .3$. This means, *find how many times* 3 *tenths are contained in* 6 (60 tenths, written 6.0). 3 tenths are contained in 60 tenths —— times.

$$.3\overline{)6.0\checkmark}$$
$$20$$

6 acres of land were divided into lots, each lot containing 3 tenths of an acre. There were —— lots.

5. Divide 9 by .3 $9.0 \div .3$ $.3\overline{)9.0\checkmark}$
6. Divide 12 by .3 $12.0 \div .3$ $.3\overline{)12.0\checkmark}$

Subtract:

a	*b*	*c*	*d*
$49\frac{2}{3}$	53.7	$84.36	12 qt. 1 pt.
$24\frac{1}{5}$	18.1	$ 7.18	5 qt. 1 pt.

e	*f*	*g*	*h*
38	46.5	$73.12	28 qt.
$15\frac{3}{7}$	28.3	$19.16	16 qt. 1 pt.

Review the first half of page 96.

There are two ways to write hundredths in figures.

27 hundredths may be written $\frac{27}{100}$, or .27.

5 hundredths may be written $\frac{5}{100}$, or .05.

4 and 7 hundredths may be written $4\frac{7}{100}$, or 4.07.

4.07 may be read in two ways: it is four and seven hundredths and it is *four hundred seven hundredths.*

Write in figures, using the decimal point:

a. 14 hundredths; 8 hundredths; 6 and 5 hundredths; 224 hundredths; 506 hundredths.

Read the following in two ways:

1. 2.46; 3.75; 4.32; 1.06; 21.24; 36.42.
2. The sum of .08 and .06 is —— hundredths.
3. The difference of .25 and .06 is —— hundredths.
4. The product of .06 × 3 is * —— hundredths.
5. The product of .06 × $\frac{1}{2}$ is * —— hundredths.
6. The product of .06 × $2\frac{1}{2}$ is * —— hundredths.
7. The quotient of .24 ÷ .03 is * ——.
8. The quotient of .24 ÷ 3 is * —— hundredths.

b. Write the answers to problems 2 to 8.

See note on page 178.

c. 24.6 × 2	*d.* 31.23 × 2
e. 18.3 × 3	*f.* 42.35 × 3
g. 23.7 × 4	*h.* 25.27 × 4
i. 31.9 × 5	*j.* 42.06 × 5
k. 29.2 × 6	*l.* 39.12 × 6

* What does it mean ?

1. The first day of January, 1906, was Monday. Name the day of the week for the first day of January of each of the following years: 1907; **1908**; 1909; 1910; 1911; **1912**; 1913; 1914.

NOTE. The leap years are in black type.

2. The first day of March, 1906, was Thursday. Name the day of the week for the first day of March of the following years: 1907; **1908**; 1909; 1910; 1911; **1912**; 1913; 1914.

Observe that if between March 1 of one year and March 1 of the next year, there is a February 29, the March 1 of the second year will be 2 days later in the week than the March 1 of the first year; otherwise it will be only 1 day later. It is simply necessary to remember that any year in which there is a February 29 is 52 weeks and 2 days, while a year that does not contain a February 29 is 52 weeks and 1 day.

3. Three fifths of 20 dollars are —— dollars.

4. Eighteen dollars are 3 fifths of —— dollars.

5. Ten dollars are what part of 15 dollars?

a. At $7 a ton, how many tons of coal can be bought for $2324?

SHORT DIVISION	LONG DIVISION
$7)$2324	$7)$2324(332
332	21
	22
$7)$3850	21
	14
$7)$4641	14

1. Imagine a load of sand that is 3 feet wide, 1 foot deep, and 9 feet long. It contains —— cubic feet. It is not a 1-yard cube, but it is a *cubic yard;* that is, it contains as many cubic feet as a 1-yard cube.

2. Nine cubic feet are —— —— of a cubic yard.

3. Eighteen cubic feet are —— —— of a cubic yard.

4. Three cubic feet are —— —— of a cubic yard.

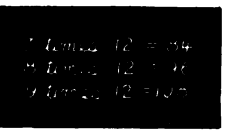
5. Six cubic feet are —— —— of a cubic yard.

4 is —— —— of 6.	6 is —— —— of 4.
6 is —— —— of 9.	9 is —— —— of 6.
8 is —— —— of 12.	12 is —— —— of 8.
10 is —— —— of 15.	15 is —— —— of 10.
12 is —— —— of 18.	18 is —— —— of 12.

a. If 7 acres of land cost $ 5852, how much did 1 acre cost? $\frac{1}{7}$ of $ 5852 =

Short Division	Long Division
7) 5852 dollars	7)$ 5852($ 836
—— dollars	56
	25
b. Divide $ 9254 by 7	21
c. Divide $ 8771 by 7	42
d. Divide $ 7973 by 7	42
e. Divide $ 5964 by 7	
f. Divide $ 4424 by 7	*g.* $ 6650 ÷ 7

1. Seven 10's are ——.
2. Seven 11's are ——.
3. Seven 12's are ——.



4. Eight dimes are —— cents.
5. Eight elevens are ——.
6. Eight feet are —— inches.

7. Nine dimes are —— cents. 4 12's =
8. Nine elevens are ——. 5 12's =
9. Nine dozen eggs are —— eggs. 6 12's =

10. One tenth of 100 is ——. 2 tenths of 100 =
11. One tenth of 200 is ——. 3 tenths of 200 =
12. One tenth of 300 is ——. 2 tenths of 300 =

13. One tenth of 320 is ——. 2 tenths of 320 =
14. One tenth of 340 is ——. 2 tenths of 340 =
15. One tenth of 350 is ——. 2 tenths of 350 =

a. One tenth of 231 is ——. 2 tenths of 231 =
b. One tenth of 232 is ——. 2 tenths of 232 =
c. One tenth of 233 is ——. 2 tenths of 233 =
d. One tenth of 1232 is ——. .2 of 1232 =
e. One tenth of 2345 is ——. .2 of 2345 =
f. One tenth of 3256 is ——. .2 of 3256 =

Add:

g	*h*	*i*	*j*
$24\frac{1}{5}$	21.7	$34.25	2 ft. 2 in.
31	6.2	$21.40	3 ft. 1 in.

1. Eleven square yards are —— square feet.

2. At 12¢ a gallon, 7 gallons of kerosene cost ——¢; 8 gallons cost ——¢; 9 gallons cost ——¢.

3. An oblong 7 inches wide and 1 foot long contains —— square inches.

4. An oblong 8 inches wide and 1 foot long contains —— square inches.

5. An oblong 9 inches wide and 1 foot long contains —— square inches.

6. The perimeter of an oblong 7 inches wide and 1 foot long is —— inches, or —— feet —— inches.

7. The area of an oblong 7 inches wide and 11 inches long is —— square inches.

8. Seventy eggs are —— dozen and ——.

9. Seventy inches are —— feet and —— inches.

10. Eighty eggs are —— dozen and ——.

11. Eighty inches are —— feet and —— inches.

12. Ninety eggs are —— dozen and ——.

Subtract:

a	*b*	*c*	*d*
$74\frac{1}{3}$	46.5	$99.00	6 ft. 8 in.
$12\frac{1}{5}$	28.5	$24.50	3 ft. 4 in.

e	*f*	*g*	*h*
37	37.8	$100.00	12 ft.
$24\frac{3}{4}$	19.2	$ 9.40	4 ft. 6 in.

Write in figures:

a. Two hundred twenty-four and seven tenths.

b. One thousand seven hundred thirty-six.

c. Three hundred thirty-one and six tenths.

d. Find the sum of the numbers in *a*, *b*, *c*.

1. If a man's wages are $60 for 5 weeks, in 1 week he earns —— dollars; in 7 weeks —— dollars; in 8 weeks —— dollars; in 9 weeks $——.

e. If a man's wages are $375 for 3 months, how much does he earn in 1 month? in 6 months?

2. If 3 dozen eggs are worth 36¢, 9 dozen are worth —— ¢.

f. If 3 sacks of flour are worth $4.80, how much are 7 sacks worth?

3. A dealer sold 12 tons of coal at $7 a ton. How much should he receive for it?

7 12's are ——. 12 7's are ——.

g. Find the amount of the following bill:

Mr. Earl Hardy,

Bought of Wm. Tanner & Co.

1906				
Apr. 2	20 lb. nails	@ 4¢		
	130 lb. barbed wire	@ 3½¢		
	2 hay forks	@ 45¢		
	75 lb. sisal rope	@ 9¢		
	1 hay carrier		4	75
	2 pulleys	@ 18¢		

a	*b*	*c*
275 dollars	85 ¢	3246
127 dollars	26 ¢	1418
148 dollars	59	1828

1. In problem *a* 275 dollars is called the **minuend.** In problem *b* the minuend is ——. In problem *c* the minuend is ——.

2. In problem *a* 127 dollars is called the **subtrahend.** In problem *b* the subtrahend is ——. In problem *c* the subtrahend is ——.

3. In problem *a* 148 dollars is called the **difference.** In problem *b* the difference is ——. In problem *c* the difference is ——.

4. To test the accuracy of work in subtraction, add the subtrahend and the difference; the result should be like the minuend.

5. 12 is contained in 40 —— times and ——.

6. 12 is contained in 40 —— and —— ——.

7. 12 is contained in 90 —— times and ——.

8. 12 is contained in 90 —— and —— ——.

Short Division	Long Division
\$8)\$5232	\$8)\$5232(654
—— times	48
	43
d. Divide 3776 by 8	40
e. Divide 9072 by 8	32
f. Divide 10586 by 8	32

1. Add $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{8}$.

I can change halves and fourths to —— ths.

$$\frac{1}{2} = \frac{\quad}{8} \qquad \frac{1}{4} = \frac{\quad}{8}$$

$$\frac{4}{8} + \frac{2}{8} + \frac{1}{8} = \frac{\quad}{8}$$

2. Find the sum of $\frac{1}{2}$ and $\frac{5}{8}$.
3. Find the sum of $\frac{1}{2}$ and $\frac{7}{8}$.
4. Find the sum of $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{5}{8}$.
5. Find the sum of $\frac{1}{2}$, $\frac{3}{4}$, and $\frac{3}{8}$.
6. Add $\frac{2}{3}$, $\frac{1}{6}$, and $\frac{1}{12}$. (Change $\frac{2}{3}$ and $\frac{1}{6}$ to ——ths.)
7. Add $\frac{1}{2}$ and $\frac{5}{7}$. (Change $\frac{1}{2}$ and $\frac{5}{7}$ to ——ths.)
8. Find the sum of $3\frac{1}{4}$ and $3\frac{1}{8}$.
9. Find the sum of $3\frac{1}{2}$ and $3\frac{1}{4}$.
10. Find the sum of $3\frac{1}{3}$ and $3\frac{1}{6}$.

a. If 8 acres of land cost $6752, how much did 1 acre cost? $\frac{1}{8}$ of $6752 =

Short Division	Long Division
8)$6752	8)$6752($844
$844	64
	35
	32
	32
	32

b. Divide 3904 by 8
c. Divide 2656 by 8
d. Divide 4392 by 8
e. Divide 5000 by 8
f. Divide 3460 by 8
g. Divide 5940 by 8
h. Divide 3620 by 8
i. Divide 4240 by 8

1. From $\frac{1}{2}$ subtract $\frac{1}{8}$.

I can change halves to ——ths.

$$\frac{1}{2} = \frac{}{8} \qquad \frac{4}{8} - \frac{1}{8} = \frac{}{8}$$

2. From $\frac{1}{2}$ subtract $\frac{3}{8}$. $\frac{5}{8} - \frac{1}{2} =$
3. From $\frac{7}{8}$ subtract $\frac{1}{2}$. $1\frac{1}{8} - \frac{1}{2} =$
4. From $\frac{3}{8}$ subtract $\frac{1}{16}$.

I can change eighths to ——ths.

$$\frac{3}{8} = \frac{}{16} \qquad \frac{6}{16} - \frac{1}{16} = \frac{}{16}$$

5. From $\frac{5}{8}$ subtract $\frac{3}{16}$. $\frac{7}{8} - \frac{5}{8} =$
6. From $\frac{7}{8}$ subtract $\frac{3}{16}$. $\frac{7}{8} - \frac{1}{16} =$
7. A carpenter had a piece of board that was $\frac{7}{8}$ of an inch thick. He planed off $\frac{3}{16}$ of an inch of its thickness. It was then —— sixteenths of an inch thick.
8. A tinner had a piece of copper wire that was $8\frac{1}{2}$ inches long. He cut from its length $\frac{3}{16}$ of an inch. It was then —— and —— sixteenths inches long.

Add:

a	*b*	*c*	*d*
$21\frac{1}{8}$	54.1	$50.00	3 ft. 2 in.
30	33.5	$30.22	3 ft. 6 in.
$24\frac{1}{16}$	26.2	$31.24	3 ft. 3 in.
23	81.3	$35.25	3 ft. 4 in.
27	9.2	$16.08	3 ft. 3 in.
$35\frac{1}{4}$	45.4	$10.01	3 ft. 2 in.
26	34.2	$12.55	3 ft. 1 in.

1. 3 is contained in 15 —— times.

2. 3 is contained in 16 —— and —— —— times.

3. $4 \div \frac{3}{4}$. This means, *find how many times* 3 *fourths are contained in* 4. 4 = —— fourths. 3 fourths are contained in 16 fourths —— and —— —— times.

4. $4 \div \frac{3}{4} = 5\frac{1}{3}$. Try to put 4 quarts of milk into $\frac{3}{4}$-quart bottles. You could fill —— bottles and have left —— —— as much as would be necessary to fill another bottle. What part of a quart of milk would be left? What part of a bottleful would be left?

5. $5 \div \frac{3}{4}$. This means, *find how many times* 3 *fourths are contained in* 5. 5 = —— fourths. 3 fourths are contained in 20 fourths —— and —— —— times.

6. $8 \div .4$. This means —— ——. 4 tenths are contained in 80 tenths —— times.

$$.4\overline{)8.0^{\checkmark}}$$
$$\underline{20}$$

8 acres of land were divided into lots, each containing .4 of an acre. There were —— lots.

Subtract:

a	*b*	*c*	*d*
47	34.2	$75.00	15 ft.
$25\frac{3}{16}$	8.6	31.25	9 ft. 4 in.

Review page 188.

Write in figures, using the decimal point:

a. 25 hundredths; 25 tenths; 37 hundredths; 37 tenths; 6 hundredths; 6 tenths; 124 hundredths; 124 tenths; 8 and 5 hundredths; 8 and 5 tenths; 46 and 7 hundredths; 46 and 7 tenths.

1. 3.52 may be read in three ways:

(1) Three and fifty-two hundredths.

(2) Three hundred fifty-two hundredths.

(3) Three and 5 tenths and 2 hundredths.

Read the following in two or more ways:

2. 4.65; 5.24; 7.03; 8.2; 48.36; 28.56.

3. The sum of .35 and .06 is —— hundredths.

4. The difference of .35 and .06 is —— hundredths.

5. The product of $.12 \times 4$ is * —— hundredths.

6. The product of $.12 \times \frac{1}{2}$ is * —— hundredths.

7. The product of $.12 \times 4\frac{1}{2}$ is * —— hundredths.

8. The quotient of $.35 \div .05$ is * ——.

9. The quotient of $.35 \div 5$ is * ——.

b. Write the answers to problems 3 to 9.

c. A cow gave 26.5 lb. of milk in the morning and the same amount at night. How many pounds did she give in the two "milkings"?

d. 34.2×3	*e.* 26.90×4
f. 21.27×3	*g.* 42.7×5
h. 14.6×3	*i.* 23.06×5

* What does it mean?

1. The tenth day of April, 1906, was Tuesday. Name the day of the week for the tenth day of April of each of the following years: 1907; **1908**; 1909; 1910; 1911; **1912**; 1913; 1914.

NOTE. The leap years are in black type.

2. How many days from April 1 to May 1? from April 1 to May 2? from April 1 to May 3? from April 1 to May 11?

3. How many days from July 1 to August 1? from July 1 to August 2? from July 1 to August 3? from July 1 to August 11?

4. Two thirds of 24 inches are —— inches.

5. 24 inches are 2 thirds of —— inches.

6. Eight inches are what part of 24 inches?

7. Sixteen inches are what part of 24 inches?

8. Six inches are what part of 24 inches?

9. Eighteen inches are what part of 24 inches?

a. If posts are set 9 feet apart, how many posts (not counting the first post) will be required for 2016 feet of fence?

SHORT DIVISION

9 ft.)2016 ft.
224

LONG DIVISION

9 ft.)2016 ft.(224
18
21
18
36
36

b. Divide 3078 feet by 9 feet.

c. Divide 4068 feet by 9 feet.

d. Divide 2250 feet by 9 feet.

e. Divide 2988 feet by 9 feet.

1. Imagine a 4-inch cube. It has how many faces. The area of each face is —— square inches. The area of all the faces together is —— square inches.

2. Imagine that you build a 4-inch cube with 1-inch cubes. How many 1-inch cubes in the first layer? how many in the first two layers? how many 1-inch cubes in all? 4 times 4 times 4 = ——.

14 is —— —— of 21. 21 is —— —— of 14.
16 is —— —— of 24. 24 is —— —— of 16.
20 is —— —— of 30. 30 is —— —— of 20.

3. 20¢ pays for 6 lemons; 30¢ pays for —— ——.

4. 10¢ pays for 4 oranges; 15¢ pays for —— ——.

5. 5¢ pays for 3 apples; 15¢ pays for —— ——.

6. 6¢ pays for 5 eggs; 18¢ pays for —— ——.

7. 10¢ pays for 4 pears; 20¢ pays for —— ——.

a. If 9 miles of fence cost $2835, how many dollars does 1 mile cost?

Short Division	Long Division
9)$2835	9)$2835($315
$ 315	27
	13
	9
	45
	45

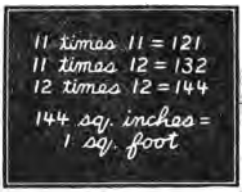
b. Divide $3789 by 9

c. Divide $3069 by 9

d. Divide $3987 by 9

e. Divide $2007 by 9

1. Eleven 11's are ——.
2. Eleven 12's are ——.
3. Twelve 11's are ——.
4. Twelve 12's are ——.
5. Twelve dimes are —— dollar and —— cents.



6. Eleven dimes are —— dollar and —— cents.
7. Twelve dozen eggs are —— eggs.
8. Eleven dozen eggs are —— eggs.
9. One tenth of 2740? of 320? of 40?
10. One tenth of 3152? of 542? of 63? of 6?
11. One tenth of 1041? of 305? of 72? of 5?
12. One tenth of 4004? of 231? of 47? of 4?
13. One tenth of 1473? of 642? of 35? of 3?
14. One tenth of a dollar is —— cents. One tenth of 1 tenth of a dollar is —— cent.
15. One tenth of 1 tenth is —— hundredth.
16. One tenth of 2 tenths is —— hundredths.
17. One tenth of 3 tenths is —— hundredths.
18. Two tenths of 2 tenths are —— hundredths.
19. Two tenths of 3 tenths are —— hundredths.

Add:

a	*b*	*c*	*d*
$33\frac{1}{2}$	29.3	$24.40	2 yd. 2 ft.
31	20.1	$34.20	5 yd. 1 ft.
$34\frac{1}{4}$	32.5	$19.10	4 yd. 1 ft.
32	91.7	$32.17	6 yd. 2 ft.
$35\frac{1}{8}$	12.4	$12.50	3 yd. 2 ft.

1. An oblong 10 inches wide and 1 foot long contains —— square inches.

2. An oblong 11 inches wide and 1 foot long contains —— square inches.

3. A 1-foot square contains —— square inches.

4. Draw a 1-foot square. Divide it into 4 equal squares. Each of the four squares is a —— inch square.

5. A 6-inch square equals what part of a 12-inch square?

6. How many square inches in a 6-inch square? in a 12-inch square?

7. 144 is how many times 36? 36 is —— twelves, and 144 is —— twelves.

8. A $\frac{1}{2}$-foot square equals what part of a 1-foot square?

9. A 1-foot square equals what part of a 2-foot square?

10. A 3-foot square is how many times as large as a 1-foot square?

11. A square yard is how many times as large as a square foot?

12. A square foot is how many times as large as a square inch?

Subtract:

a	*b*	*c*	*d*
57	54.3	\$65.30	12 yd.
$22\frac{5}{8}$	16.7	\$18.50	5 yd. 2 ft.

Write in figures:

a. One thousand three hundred seventy-five.

b. One thousand forty-six and three tenths.

c. One thousand fifty-two and two hundredths.

d. One thousand eight and twenty-four hundred.

e. Find the sum of the numbers in *a*, *b*, *c*, *d*.

Read the following, using the word "and" in place of the decimal point only:

1. 2346.06; 7575.32; 8406.5; 25275.37; 206.06.

f. Find the sum of the numbers given in No. 1.

2. If a man's wages are $66 for 6 weeks, in 1 week he earns —— dollars; in $1\frac{1}{2}$ weeks he earns —— dollars.

g. If a man's wages are $475 for 5 months, how much does he earn in 1 month? in 6 months?

3. A dealer sold 12 tons of coal at $11 a ton. How much should he receive for it?

11 times 12 =

12 times 11 =

h. Find the cost:

3 tons coal	@	$7.50
2 tons coal	@	$3.25
5 cords wood	@	$5.25
8 bbl. cement	@	$1.80
3 bbl. cement	@	$1.80
5 bbl. cement	@	$1.80

For Study

11 times 1 are 11
11 times 2 are 22
11 times 3 are 33
11 times 4 are 44
11 times 5 are 55
11 times 6 are 66
11 times 7 are 77
11 times 8 are 88
11 times 9 are 99
11 times 10 are 110
11 times 11 are 121
11 times 12 are 132

a	*b*	*c*	*d*
12 dollars	15 oranges	25¢	275
3	5	6	4
36 dollars	75 oranges	150¢	1100

1. In problem *a* 12 dollars is called the **multiplicand**. In problem *b* the multiplicand is ——. In problem *c* the multiplicand is ——.

2. In problem *a* 3 is called the **multiplier**. In problem *b* the multiplier is ——. In problem *c* the multiplier is ——.

3. In problem *a* 36 dollars is called the **product**. In problem *b* the product is ——. In problem *c* the product is ——.

4. To test the accuracy of work in multiplication, divide the product by the multiplier; the result should be like the multiplicand.

Observe that the multiplier can never be a number of dollars or cents or oranges or books or feet or inches. It is always *simply a number* that tells how many times the multiplicand is to be taken.

5. Two cents multiplied by 2 cents is *nonsense*.

e. Divide 2784 by 12
f. Divide 2688 by 12
g. Divide 2892 by 12
h. Divide 2532 by 12
i. Divide 2676 by 12
j. Divide 2772 by 12

```
12)2676(223
  24
  27
  24
  36
  36
```

1. Add $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{6}$, and $\frac{1}{9}$.

I can change halves, thirds, sixths, and ninths to ——ths.

$$\frac{1}{2}=\frac{\quad}{18} \qquad \frac{1}{3}=\frac{\quad}{18} \qquad \frac{1}{6}=\frac{\quad}{18} \qquad \frac{1}{9}=\frac{\quad}{18}$$

$$\frac{9}{18}+\frac{6}{18}+\frac{3}{18}+\frac{2}{18}=\frac{\quad}{18}$$

2. Find the sum of $\frac{1}{2}$ and $\frac{1}{9}$
3. Find the sum of $\frac{1}{6}$ and $\frac{1}{9}$
4. Find the sum of $\frac{1}{2}$ and $\frac{5}{9}$
5. Find the sum of $\frac{5}{6}$ and $\frac{1}{9}$
6. Find the sum of $\frac{1}{6}$ and $\frac{2}{9}$
7. Find the sum of $\frac{1}{6}$ and $\frac{1}{9}$ and $\frac{1}{18}$ (Change $\frac{1}{6}$ and $\frac{1}{9}$ to ——ths.)
8. Find the sum of $\frac{1}{3}$, $\frac{2}{3}$, and $\frac{1}{9}$ (Change $\frac{1}{3}$ and $\frac{2}{3}$ to ——ths.)
9. Find the sum of $\frac{1}{2}$, $\frac{1}{9}$, and $\frac{5}{9}$ (Change to ——ths.)
10. Find the sum of $3\frac{1}{2}$ and $3\frac{1}{9}$ $(\frac{1}{2}+\frac{1}{9}=)$
11. Find the sum of $3\frac{1}{6}$ and $3\frac{1}{9}$ $(\frac{1}{6}+\frac{1}{9}=)$
12. Find the sum of $3\frac{1}{3}$ and $3\frac{1}{9}$ $(\frac{1}{3}+\frac{1}{9}=)$

a. If 12 acres of land cost $3864, how much did 1 acre cost?

b. Divide $3984 by 12
c. Divide 3876 by 12
d. Divide 3744 by 12
e. Divide 3612 by 12
f. Divide 4092 by 12
g. Divide 4008 by 12

12)$3864($322
36
26
24
24
24

1. From $\frac{1}{2}$ subtract $\frac{1}{9}$.

I can change halves and ninths to ——ths.

$\frac{1}{2} = \frac{\quad}{18}$ $\frac{1}{9} = \frac{\quad}{18}$ $\frac{9}{18} - \frac{2}{18} = \frac{\quad}{18}$

2. From $\frac{5}{6}$ subtract $\frac{1}{9}$. $\frac{1}{6} - \frac{1}{9} =$
3. From $\frac{5}{9}$ subtract $\frac{1}{6}$. $\frac{7}{9} - \frac{1}{6} =$
4. From $\frac{4}{9}$ subtract $\frac{1}{6}$. $\frac{5}{9} - \frac{1}{2} =$
5. From 5 subtract $1\frac{4}{9}$. $6 - 1\frac{5}{9} =$
6. From 7 subtract $2\frac{2}{9}$. $8 - 3\frac{7}{9} =$
7. $\frac{5}{6}$ of a foot $\times 2 =$ —— and —— feet.
8. $\frac{1}{6}$ of a foot $\times \frac{1}{2}$ means ——.

   $\frac{1}{2}$ of $\frac{1}{6}$ of a foot is —— —— of a foot.
9. $\frac{5}{6}$ of a foot $\times \frac{1}{2}$ means ——.

   $\frac{1}{2}$ of $\frac{1}{6} = \frac{1}{12}$ $\frac{1}{2}$ of $\frac{5}{6} = \frac{\quad}{12}$
10. $\frac{5}{9} \times \frac{1}{2}$ means ——.

    $\frac{1}{2}$ of $\frac{1}{9} =$ ——. $\frac{1}{2}$ of $\frac{5}{9} = \frac{\quad}{18}$

Add:

a	*b*	*c*	*d*
$29\frac{1}{9}$	35.1	64.20	3 gal. 2 qt.
30	36.2	5.29	4 gal. 1 qt.
$41\frac{1}{6}$	31.3	.72	5 gal. 3 qt.
42	24.2	.36	1 gal. 0 qt.
$33\frac{1}{3}$	51.1	.05	3 gal. 3 qt.
24	53.3	2.50	2 gal. 2 qt.
26	19.1	21.30	4 gal. 1 qt.
52	16.2	19.40	2 gal. 2 qt.
41	14.2	12.00	1 gal. 1 qt.

1. 4 is contained in 25 —— and ————.

2. 4 is contained in 26 —— and ————.

3. 4 is contained in 27 —— and ————.

4. $5 \div \frac{4}{5}$. This means, *find how many times* $\frac{4}{5}$ *are contained in* 5. $5 =$ —— fifths.

4 fifths are contained in 25 fifths —— and —— —— times.

$$\frac{25}{5} \div \frac{4}{5} =$$

At $\frac{4}{5}$ of a dollar a yard, for \$5 I can buy —— and —— —— yards.

5. $6 \div \frac{4}{5}$. This means ————.

6. $7 \div \frac{4}{5}$. This means ————.

7. $8 \div \frac{4}{5}$. This means ————.

8. $5 \div \frac{3}{4}$. Change the 5 to fourths. $20 \div 3 =$

9. $6 \div \frac{3}{4}$. Change the 6 to fourths.

10. $7 \div \frac{3}{4}$. Change the 7 to fourths.

11. $5 \div \frac{2}{3}$. Change the 5 to thirds. $15 \div 2 =$

12. $6 \div \frac{2}{3}$. Change the 6 to thirds.

13. $5 \div \frac{3}{5}$. Change the 5 to fifths.

14. $6\frac{1}{5} \div \frac{4}{5}$. Change $6\frac{1}{5}$ to fifths.

Subtract:

a	*b*	*c*	*d*
67	72.1	\$700	15 gal.
$34\frac{5}{9}$	36.7	24.75	7 gal. 3 qt.

Review pages 188 and 198.

Write in figures, using the decimal point:

a. One hundred thirty-four and one tenth.

b. One hundred thirty-four tenths.

c. One hundred thirty-four hundredths.

1. $60¢ \times \frac{1}{2}$ This means, *find* —— —— *of* 60¢.
1 half of 60¢ is —— ¢.

At 60¢ a yard, 2 yards of ribbon cost ———.
At 60¢ a yard, ½ of a yard of ribbon costs ———.
At 60¢ a yard, 2½ yd. of ribbon cost ———.

2. \$60 × .2 This means, *find* 2 *tenths of* \$60.
1 tenth of \$60 is ——. 2 tenths of \$60 are ——.

At \$60 an acre, 3 acres of land cost ———.
At \$60 an acre, .2 of an acre of land cost ———.
At \$60 an acre, 3.2 acres of land cost ———.

3. \$60 × 4.3 This means, *find* 4 *times* \$60 *and* .3 *of* \$60 *and add them.* To do this without using a pencil, begin with the figure 4. To do it with the aid of a pencil, begin with the figure 3.

	\$6ˇ0
	4.3
	18.0
	240.
	258.0

d. Multiply 65 by 4.3

e. Multiply 75 by 4.3

f. Multiply 125 by 4.3

g. Multiply 234 by 4.3

h. Multiply 325 by 4.3

	6ˇ5
	4.3
	19.5
	260.
	279.5

NOTE. In multiplying by tenths with the aid of a pencil, use the separatrix (ˇ) to indicate 1 tenth of the multiplicand, and write the decimal point immediately after writing the tenths' figure of the partial product.

1. How many days from June 1 to June 16? how many weeks from June 1 to June 16? If June 1 is Monday, what day of the week is June 16?

2. How many days from June 1 to July 6? How many weeks from June 1 to July 6? If June 1 is Monday, what day of the week is July 6?

3. Three fourths of 24 inches are —— inches.

4. Twenty-four inches are 3 fourths of —— inches.

5. Seven inches are what part of 28 inches?

6. After selling 3 fourths of his flock of sheep, a farmer had 20 sheep left. How many did he have before he sold any? How many did he sell?

7. One fifth of 25 is 1 half of ——.

8. Two fifths of 25 are 1 half of ——.

9. One half of 12 is 1 third of ——.

10. One half of 12 is 2 thirds of ——.

a. At 12¢ each, how many posts can be bought for \$38.64? \$38.64 ÷ \$.12. This means, *find how many times* 12¢ *are contained in* 3864¢

b. Divide \$39.84 by \$.12
c. Divide \$40.92 by \$.12
d. Divide \$27.96 by \$.12
e. Divide \$29.04 by \$.12
f. Divide \$30.00 by \$.12
g. Divide \$41.04 by \$.12

\$.12)\$38.64(322
36
26
24
24
24

1. Imagine a box that is 5 inches long, 3 inches wide, and 2 inches high.

(1) The area of the top of the box is —— square inches.

(2) The area of the bottom of the box is ——.

(3) The area of the top and the bottom is ——.

(4) The area of one side of the box is ————.

(5) The area of both sides of the box is ——.

(6) The area of one end of the box is ————.

(7) The area of both ends of the box is ——.

a. Using your pencil, can you find the area of the entire outside of the box?

15 is —— —— of 20. 20 is —— —— of 15.
18 is —— —— of 24. 24 is —— —— of 18.
20 is —— —— of 25. 25 is —— —— of 20.
18 is —— —— of 27. 27 is —— —— of 18.

2. $1.00 pays for 12 tickets; 75¢ pays for ——.

3. 20¢ pays for 8 bananas; 15¢ pays for ——.

4. $40 pays for 12 tons; $30 pays for ——.

b. If 12 bbl. of apples cost $30.24, how much does 1 bbl. cost? $30.24 ÷ 12. This means, *find* 1 *twelfth of* $30.24.

c. Divide $29.04 by 12
d. Divide $31.20 by 12
e. Divide $41.16 by 12
f. Divide $38.52 by 12
g. Divide $52.92 by 12
h. Divide $51.00 by 12

$$\begin{array}{r|l} 12 & \$30.24 \\ \hline & \$2.52 \\ & 24 \\ \hline & 62 \\ & 60 \\ \hline & 24 \\ & 24 \\ \hline \end{array}$$

Review page 77.

1. One pound is —— ounces.
2. Two pounds are —— ounces.
3. Three pounds are —— ounces.

2 times 16 = 32
3 times 16 = 48
4 times 16 = 64

4. One hundredth of 300 is ——. .02 of 300 =
5. One hundredth of 400 is ——. .02 of 400 =
6. One hundredth of 600 is ——. .02 of 600 =
7. One hundredth of 500 is ——. .03 of 500 =
8. One tenth of 320 is ——. .01 of 320 =
9. One tenth of 460 is ——. .01 of 460 =
10. One tenth of 540 is ——. .01 of 540 =
11. One tenth of 280 is ——. .01 of 280 =
12. One hundredth of 320 is ——. .02 of 320 =
13. One hundredth of 240 is ——. .02 of 240 =
14. One hundredth of 342 is ——. .02 of 342 =
15. One hundredth of 223 is ——. .02 of 223 =
16. One hundredth of 4250 is ——.
17. One hundredth of 3542 is ——.
18. One hundredth of 2475 is ——.

Add:

a	*b*	*c*	*d*
$28\frac{1}{9}$	47.2	$59.20	3 bu. 1 pk.
37	35.4	$38.40	5 bu. 2 pk.
$29\frac{1}{6}$	86.2	$57.60	2 bu. 3 pk.
38	19.5	$39.30	4 bu. 1 pk.
$39\frac{1}{2}$	27.3	$27.20	5 bu. 3 pk.

1. *A figure having square corners is a rectangle.* It may be a square or it may be an oblong.

2. A rectangle $\frac{1}{2}$ an inch wide and 10 inches long contains —— square inches.

a. A rectangular piece of land is $\frac{1}{2}$ of a foot wide and 238 feet long. How many square feet does it contain?

3. A rectangle 2 feet wide and 2 yards long contains —— square feet.

b. A rectangular piece of land 2 feet wide and 35 yards long contains how many square feet?

4. A certain rectangle contains 18 square inches; it is 3 inches wide; it is —— inches long.

c. A certain rectangular piece of land contains 726 square feet; it is 6 feet wide. How long is it?

5. The area of one face of a 6-inch cube is —— square inches.

d. Find the area of all the faces of a 6-inch cube.

6. The area of one face of a 7-inch cube is —— square inches.

e. Find the area of all the faces of a 7-inch cube.

f. Find the area of all the faces of an 8-inch cube.

Subtract:

g	*h*	*i*	*j*
$84\frac{1}{4}$	96.3	$1000.00	27 bu.
$31\frac{1}{2}$	15.9	$ 999.99	15 bu. 3 pk.

Write in figures:

a. Two thousand sixty-five and 3 tenths.

b. Two thousand two hundred two and 7 tenths.

c. Two thousand one hundred six and 6 hundredths.

d. Two thousand two hundred one and 25 hundredths.

e. Find the sum of the numbers in *a, b, c, d.*

Read the following, using the word "and" in place of the decimal point only:

1. 3524.27; 7205.2; 10246.07; 25154.8.

f. Find the sum of the numbers given in No. 1.

2. If a man earns $15 in 5 days, how many dollars can he earn in 9 days?

g. If a man earns $7 in two days, how many dollars can he earn in 8 days?

h. Multiply $270 by $\frac{1}{2}$

i. Multiply 270 by .5

j. Multiply $270 by $2\frac{1}{2}$

k. Multiply $270 by 2.5

l. Multiply 1280 by $\frac{1}{2}$

m. Multiply 1280 by .5

n. Multiply 1280 by $3\frac{1}{2}$

o. Multiply 1280 by 3.5

p. Multiply 264 by $\frac{1}{2}$

q. Multiply 264 by .5

r. Multiply 265 by $\frac{1}{2}$

s. Multiply 265 by .5

For Study

12 times 1 are 12
12 times 2 are 24
12 times 3 are 36
12 times 4 are 48
12 times 5 are 60
12 times 6 are 72
12 times 7 are 84
12 times 8 are 96
12 times 9 are 108
12 times 10 are 120
12 times 11 are 132
12 times 12 are 144

a	*b*	*c*	*d*
3¢)36¢	3)$36	5)45	½)8
12 times	$12	9	16

1. In problem *a* 36¢ is called the **dividend**. In problem *b* the dividend is ——. In problem *c* the dividend is ——. In problem *d* the dividend is ——.

2. In problem *a* 3¢ is called the **divisor**. In problem *b*, the divisor is ——. In problem *c* the divisor is ——. In problem *d* the divisor is ——.

3. In problem *a* 12 is called the **quotient**. It tells how many times 3¢ are contained in 36¢. In problem *b* the quotient is ——. It tells what 1 third of the dividend is. In problem *c* the quotient is ——. In problem *d* the quotient is ——.

4. In problem *a* the —— and the —— are like numbers.

5. In problem *b* the —— and the —— are like numbers.

e. Divide 48 by 1.2. This means, *find how many times* 12 *tenths are contained in* 48. 48 = 480 tenths.

f. Divide 60 by 1.2
g. Divide 72 by 1.2
h. Divide 49.2 by 1.2
i. Divide 63.6 by 1.2
j. Divide 76.8 by 1.2

1.2)48.0✓(40
48
0

1.2 rods are contained in 48 rods 40 times.

1. Add $\frac{1}{2}$, $\frac{1}{5}$, and $\frac{1}{4}$.

I can change halves, fifths, and fourths to ——ths.

$\frac{1}{2} = \frac{\quad}{20}$ $\frac{1}{5} = \frac{\quad}{20}$ $\frac{1}{4} = \frac{\quad}{20}$

$\frac{10}{20} + \frac{4}{20} + \frac{5}{20} = \frac{\quad}{20}$

2. Find the sum of $\frac{3}{4}$ and $\frac{1}{5}$.
3. Find the sum of $\frac{2}{5}$ and $\frac{1}{4}$.
4. Find the sum of $\frac{3}{5}$ and $\frac{1}{4}$.
5. Find the sum of $\frac{4}{5}$ and $\frac{1}{4}$.
6. Find the sum of $\frac{1}{5}$ and $\frac{3}{4}$.

a. Add $5\frac{1}{5}$, $3\frac{1}{4}$, and $6\frac{1}{2}$.
b. Add $7\frac{2}{5}$, $6\frac{1}{4}$, and 8.
c. Add $5\frac{1}{3}$, $7\frac{1}{4}$, and $3\frac{1}{6}$.
d. Add $3\frac{1}{5}$, $4\frac{1}{3}$, and 12.

$\frac{1}{5} + \frac{1}{4} + \frac{1}{2} =$
$\frac{2}{5} + \frac{1}{4} =$
$\frac{1}{3} + \frac{1}{4} + \frac{1}{6} =$
$\frac{1}{5} + \frac{1}{3} =$

7. I can change fifths and fourths to ——ths.
8. I can change thirds and fourths to ——ths.
9. I can change halves and ninths to ——ths.
10. I can change halves and thirds to ——ths.

e. If 13 barrels of flour cost \$68.25, how much does 1 barrel cost? \$68.25 ÷ 13.

f. Divide \$42.25 by 13
g. Divide \$30.55 by 13
h. Divide \$53.95 by 13
i Divide \$30.42 by 13
j. Divide \$16.25 by 13
k. Divide \$43.29 by 13
l. Divide \$27.56 by 13

13)\$68.25(\$5.25
65
32
26
65
65

2 13's=26
3 13's=39
4 13's=52
5 13's=65

1. From $\frac{1}{4}$ subtract $\frac{1}{5}$.

I can change fourths and fifths to ——ths.

$\frac{1}{4} = \frac{\quad}{20}$ $\frac{1}{5} = \frac{\quad}{20}$ $\frac{5}{20} - \frac{4}{20} = \frac{\quad}{20}$

2. From $\frac{3}{4}$ subtract $\frac{1}{5}$. $\frac{3}{4} - \frac{2}{5} =$
3. From $\frac{2}{5}$ subtract $\frac{1}{4}$. $\frac{3}{5} - \frac{1}{4} =$
4. From $\frac{4}{5}$ subtract $\frac{1}{4}$. $\frac{3}{4} - \frac{3}{5} =$

a. From $12\frac{3}{4}$ subtract $6\frac{1}{5}$. $\frac{1}{3} - \frac{1}{6} =$
b. From $15\frac{4}{5}$ subtract $8\frac{1}{4}$. $\frac{1}{2} - \frac{1}{5} =$
c. From $24\frac{3}{5}$ subtract $11\frac{1}{4}$. $\frac{1}{2} - \frac{1}{6} =$

5. $\frac{3}{4}$ of a foot $\times 2 =$ —— and —— —— feet.
6. $\frac{1}{4}$ of a foot $\times \frac{1}{2}$ means ————.

$\frac{1}{2}$ of $\frac{1}{4}$ of a foot is —— —— of a foot.

7. $\frac{3}{4}$ of a foot $\times \frac{1}{2}$ means ————

$\frac{1}{2}$ of $\frac{1}{4} = \frac{1}{8}$ $\frac{1}{2}$ of $\frac{3}{4} = \frac{\quad}{8}$

8. $\frac{5}{6}$ of a foot $\times \frac{1}{2}$ means ————.

$\frac{1}{2}$ of $\frac{5}{6}$ of a foot is —— —— of a foot.

Add:

d	*e*	*f*	*g*
$34\frac{1}{4}$	24.9	$13.25	4 lb. 1 oz.
36	33.8	$15.25	5 lb. 2 oz.
72	36.7	$27.30	3 lb. 2 oz.
$81\frac{1}{5}$	35.9	$24.75	6 lb. 1 oz.
43	49.9	$36.45	7 lb. 1 oz.
$75\frac{2}{5}$	37.8	$83.10	5 lb. 4 oz.
83	58.6	$75.06	6 lb. 3 oz.
41	37.9	$33.64	3 lb. 3 oz.

1. Divide 6 by .4. This means, *find how many times .4 are contained in* 6. 6 = —— tenths. 4 tenths are contained in 60 tenths —— times.

$$.4\overline{)6.0^{\vee}}$$
$$15$$

6 acres of land were divided into lots, each containing 4 tenths of an acre. There were —— lots.

2. Divide 6 by .5 $3 \div .5 =$
3. Divide 2 by .4 $2 \div .5 =$
4. Divide 8 by .2 $4 \div .2 =$
5. Divide 7 by .2 $5 \div .2 =$
6. Divide 12 by .6 $12 \div .4 =$

Review page 207.

7. $4 \div \frac{3}{5}$. Change the 4 to ——ths. $20 \div 3 =$
8. $4\frac{1}{5} \div \frac{3}{5}$. Change $4\frac{1}{5}$ to ——ths. $21 \div 3 =$
9. $5\frac{1}{5} \div \frac{3}{5}$. Change $5\frac{1}{5}$ to ——ths. $26 \div 3 =$
10. $6\frac{3}{5} \div \frac{3}{5}$. Change $6\frac{3}{5}$ to ——ths. $33 \div 3 =$
11. $5\frac{2}{5} \div \frac{3}{5}$. Change $5\frac{2}{5}$ to ——ths. $27 \div 3 =$

a. Divide 18 by $\frac{2}{3}$. Change 18 to thirds. $54 \div 2 =$ ——. 18 yards of ribbon were divided into pieces, each $\frac{2}{3}$ of a yard long. There were —— pieces.

b. Divide 56 by $\frac{2}{3}$ *c*. $73 \div \frac{2}{3} =$

Subtract:

d	*e*	*f*	*g*
$65\frac{1}{6}$	84.7	$1001	17 lb. 14 oz.
$32\frac{1}{2}$	29.6	$ 896.25	5 lb. 8 oz.

Write in figures, using the decimal point:

a. Two hundred seventy-five and six tenths.
b. Two hundred seventy-five tenths.
c. Two hundred seventy-five hundredths.

Read the following in two or more ways:

1. 2.65; 26.5; 265.4; 265.43; 265.07.

2. $60¢ \times \frac{1}{3}$. This means, *find* —— —— *of* 60¢.
1 third of 60¢ is —— ¢.

3. $60¢ \times \frac{2}{3}$. This means, *find* —— —— *of* 60¢.
1 third of 60¢ is —— ¢; 2 thirds of 60¢ are —— ¢.

d. Multiply 240 by $2\frac{1}{2}$
e. Multiply 360 by $2\frac{1}{3}$
f. Multiply 480 by $2\frac{1}{3}$
g. Multiply 250 by $3\frac{1}{2}$
h. Multiply 540 by $3\frac{1}{3}$

240
$2\frac{1}{2}$
120
480
600

i. Multiply $250 by 2.3

At $250 an acre, 1 tenth of an acre costs —— dollars.
3 tenths of an acre cost ——.
2 acres cost ——.
2.3 acres cost ——.

$25^{\checkmark}0
2.3
75.0
500.
575.0

j. Multiply $346 by 2.3
k. Multiply $274 by 2.3
l. Multiply $175 by 4.2
m. Multiply $225 by 2.5
n. Multiply $225 by $2\frac{1}{2}$

$34^{\checkmark}6
2.3
103.8
692.
$795.8

1. How many days from July 10 to August 15? From July 10 to August 10 it is —— days. From August 10 to August 15 it is —— days. 31 days plus 5 days = —— days.

2. If July 10 is Tuesday, what day of the week is August 15? From July 10 to Aug. 15 it is 36 days; this is —— weeks and —— day. Five weeks from July 10 will be Tuesday. Five weeks and 1 day from July 10 will be ——.

3. How many days from Aug. 10 to Sept. 17? *Ans.* 31 and 7. This is —— weeks and —— days.

4. Two fifths of 10 inches are —— inches.

5. Ten inches are 2 fifths of —— inches.

6. Fifteen inches are what part of 25 inches?

7. A boy sold 4 fifths of the pop-corn he raised and had 3 bushels left. How many bushels did he raise? How many bushels did he sell?

a. A farmer sold 4 fifths of the oats he raised and had 364 bushels left. How many bushels did he raise? How many bushels did he sell?

b. A farmer paid $31.50 for some posts at $.14 each. How many did he buy?

c. Divide 17.22 by .14

d. Divide 29.82 by .14

e. Divide 31.08 by .14

f. Divide 43.68 by .14

g. Divide 45.22 by .14

h. Divide 15.68 by .14

$.14)$31.50(225
28
35
28
70
70

2 14's=28
3 14's=42
4 14's=56
14's=70

1. Can you imagine a box 4 feet long, 2 feet wide, and 1 foot high?

(1) The area of the top of this box is —— —— ——.

(2) The area of the bottom of this box is —— —— ——.

(3) The area of one side of this box is —— —— ——.

(4) The area of both sides of this box is —— —— ——.

(5) The area of one end of this box is —— —— ——.

(6) The area of both ends of this box is —— —— ——.

(7) Can you tell without using a pencil how many square feet of paper would be required to cover the entire outside of this box?

2. Imagine a 2-foot cube. It has —— faces. Each face is a 2-foot ——. The area of the entire surface of the cube is —— square feet.

3. The top of a desk is $2\frac{1}{2}$ feet wide and 4 feet long; its area is —— square feet.

a. If 15 tons of coal cost \$63, how much did 1 ton cost?

b. Divide \$48 by 15

c. Divide \$34.50 by 15

d. Divide \$51 by 15

e. Divide \$35.25 by 15

15)\$63.00(\$4.20
60
30
30

2 15's=30
3 15's=45
4 15's=60
5 15's=75

1. $1\frac{1}{2}$ times 6 means once 6 and $\frac{1}{2}$ of 6, or ——.
2. $1\frac{1}{3}$ times 6 means once 6 and $\frac{1}{3}$ of 6, or ——.
3. $1\frac{1}{2}$ times 8 means once 8 and $\frac{1}{2}$ of 8, or ——.
4. $1\frac{1}{2}$ times 12 = $1\frac{1}{2}$ times 13 =
5. $1\frac{1}{2}$ times 14 = $1\frac{1}{2}$ times 15 =
6. $1\frac{1}{2}$ times 16 = $1\frac{1}{2}$ times 17 =
7. $2\frac{1}{3}$ times 12 = $2\frac{1}{3}$ times 15 =

Review page 201, problems 9 to 13.

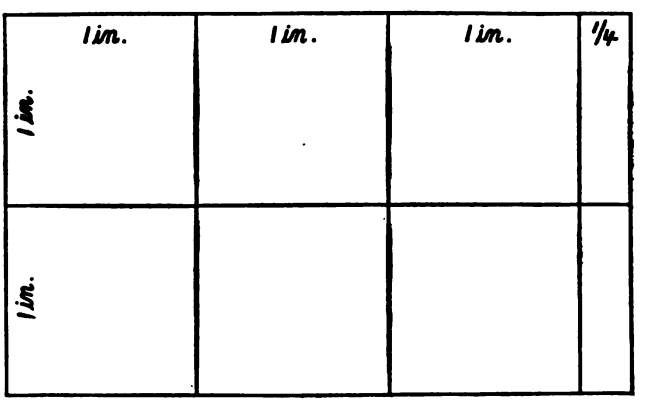
8. One hundredth of 2700? of 800? of 80? of 7?
9. One hundredth of 2756? of 824? of 82? of 8?
10. One hundredth of 3245? of 523? of 46? of 5?
11. One hundredth of 1425? of 364? of 52? of 6?
12. One hundredth of 3042? of 205? of 31? of 4?
13. One hundredth of 5236? of 324? of 75? of 3?
14. One hundredth of 2894? of 142? of 12? of 2?

15. One tenth of 382.5? of 23.6? of 2.4? of .3?
16. One tenth of 262.3? of 32.4? of 3.5? of .7?
17. One tenth of 132.7? of 52.1? of 2.7? of .6?
18. One tenth of 746.2? of 35.3? of 6.4? of .8?
19. One tenth of 146.6? of 31.8? of 7.2? of .5?
20. One tenth of 100.4? of 10.4? of 7.4? of .4?
21. One tenth of 222.2? of 22.2? of 2.2? of .2?

Add:

a	*b*	*c*	*d*
$47\frac{1}{2}$	4.27	15.40	5 lb. 2 oz.
36	3.46	18.30	6 lb. 3 oz.
48	2.75	1.50	7 lb. 5 oz.
$54\frac{1}{4}$	1.43	3.40	2 lb. 1 oz.

1. Observe the diagram given below. It is a rectangle 2 inches by $3\frac{1}{4}$ inches. It is made up of two rows of 1-inch squares with a piece of another square at one end of each row. The piece is —— —— of a square inch. In each row there are —— and —— —— square inches. $3\frac{1}{4}$ sq. in. $\times 2 =$ The area of a rectangle 2 inches by $3\frac{1}{4}$ inches is —— square inches.



2. The area of a rectangle $4\frac{1}{4}$ inches by 2 inches is ——. $4\frac{1}{4}$ sq. in. $\times 2 =$

3. Is a rectangle 2 inches by 3 inches a square or an oblong?

Subtract:

a	*b*	*c*	*d*
$75\frac{1}{5}$	3.76	36.50	18 lb. 1 oz.
$32\frac{4}{5}$	1.29	1.90	6 lb. 12 oz.

Read the following, using the word "and" *in place of the decimal point only:*

1. 374.5; 1260.05; 2175.24; 10346.23; 12154.13; 15175.6.

a. Find the sum of the numbers given in No. 1.

2. Twenty times a number is 10 times 2 times the number.

2 times 4 are ——.	20 times 4 are ——.
2 times 5 are ——.	20 times 5 are ——.
2 times 7 are ——.	20 times 7 are ——.
2 times 30 are ——.	20 times 30 are ——.

3. Thirty times a number is 10 times 3 times the number.

3 times 4 are ——.	30 times 4 are ——.
3 times 5 are ——.	30 times 5 are ——.
3 times 6 are ——.	30 times 6 are ——.
3 times 20 are ——.	30 times 20 are ——.

b. Multiply 24 by 2; by 20

c. Multiply 36 by 2; by 20

d. Multiply 27 by 2; by 20

$$\begin{array}{r} 24 \\ \underline{20} \\ 480 \end{array}$$

e. Multiply \$540 by .03

At \$540 an acre, 1 hundredth of an acre costs ——. 3 hundredths cost ——.

$$\begin{array}{r} \$5^{\checkmark}40 \\ .03 \\ \hline \$16.20 \end{array}$$

f. Multiply \$375 by .04

g. Multiply \$286 by .02

h. Multiply \$524 by .05

$$\begin{array}{r} \$3^{\checkmark}75 \\ .04 \\ \hline \$15.00 \end{array}$$

i. Multiply \$2000 by .07

j. \$2140 by .03

k. Multiply \$2542 by .04

l. \$1150 by .05

Review page 214.

$\$4)\overline{\$48}$ $\quad\quad$ $4)\overline{\$48}$

12 $\quad\quad$ $\$12$

1. Observe that the dividend divided by the quotient gives the divisor.

2. Observe that the product of the divisor and the quotient is equal to the dividend.

3. In a problem the dividend is \$54; the quotient is \$6; the divisor is ——.

4. In a problem the divisor is 8; the quotient is 12; the dividend is ——.

$1)\overline{6}$ $\quad\quad$ $2)\overline{6}$ $\quad\quad$ $\frac{1}{2})\overline{6}$

6 $\quad\quad$ 3 $\quad\quad$ 12

5. If the divisor is 1, the quotient number is the same as the dividend number. If the divisor is more than 1, the quotient number is —— than the dividend number. If the divisor is less than 1, the quotient number is —— than the dividend number.

a. 2789 inches are how many feet?

b. Divide 3983 by 12

c. Divide 5089 by 12

d. Divide 6500 by 12

e. Divide 7505 by 12

f. Divide 8690 by 12

g. Divide 9720 by 12

h. Divide 10000 by 12

$12)2789(232\frac{5}{12}$

24

38

36

29

24

5

1. Add $\frac{1}{3}$ and $\frac{1}{7}$.

I can change thirds and sevenths to ——, etc.

2. Find the sum of $\frac{2}{3}$ and $\frac{1}{7}$. $\frac{1}{3}+\frac{2}{7}=$

3. Find the sum of $\frac{1}{3}$ and $\frac{3}{7}$. $\frac{2}{3}+\frac{2}{7}=$

4. Find the sum of $\frac{2}{3}$ and $\frac{4}{7}$. $\frac{1}{3}+\frac{4}{7}=$

5. Find the sum of $\frac{1}{3}$ and $\frac{5}{7}$. $\frac{2}{3}+\frac{5}{7}=$

a. Add 8, 15, $12\frac{1}{7}$, and $9\frac{1}{3}$. $\frac{1}{7}+\frac{1}{3}=$

b. Add 7, 14, $16\frac{2}{7}$, and $8\frac{1}{3}$. $\frac{2}{7}+\frac{1}{3}=$

c. Add 9, 12, $15\frac{3}{7}$, and $7\frac{1}{3}$. $\frac{3}{7}+\frac{1}{3}=$

d. Add 6, 17, $13\frac{4}{7}$, and $6\frac{1}{3}$. $\frac{4}{7}+\frac{1}{3}=$

6. I can change fifths and thirds to ——ths.

7. I can change fifths and halves to ——ths.

8. I can change halves to 4ths, 6ths, ——ths, ——ths, ——ths.

$\frac{1}{2}=\frac{}{4}$ $\frac{1}{2}=\frac{}{6}$ $\frac{1}{2}=\frac{}{8}$ $\frac{1}{2}=\frac{}{10}$ $\frac{1}{2}=\frac{}{16}$

9. I can change thirds to 6ths, ——ths, ——ths, ——ths.

$\frac{1}{3}=\frac{}{6}$ $\frac{1}{3}=\frac{}{9}$ $\frac{1}{3}=\frac{}{12}$ $\frac{1}{3}=\frac{}{15}$ $\frac{1}{3}=\frac{}{18}$ $\frac{1}{3}=\frac{}{21}$

$\frac{2}{3}=\frac{}{6}$ $\frac{2}{3}=\frac{}{9}$ $\frac{2}{3}=\frac{}{12}$ $\frac{2}{3}=\frac{}{15}$ $\frac{2}{3}=\frac{}{18}$ $\frac{2}{3}=\frac{}{21}$

e. Paid \$85 for 16 tons of coal. How much did it cost per ton?

16)\$85.00(\$5.31+*
80
50
48
20
16
4

f. \$75 by 16

g. \$65 by 16

h. \$70.50 by 16

i. \$69.40 by 16

j. \$54.20 by 16

k. \$39.20 by 16

2 16's = 32
3 16's = 48
4 16's = 64
5 16's = 80

* This means that it cost part of a cent more than \$5.31 a ton.

1. From $\frac{1}{3}$ subtract $\frac{1}{7}$.

I can change thirds and sevenths to ——ths, etc.

2. From $\frac{2}{3}$ subtract $\frac{1}{7}$. $\frac{2}{3}-\frac{2}{7}=$
3. From $\frac{2}{3}$ subtract $\frac{2}{7}$. $\frac{2}{3}-\frac{4}{7}=$
4. From $\frac{5}{7}$ subtract $\frac{2}{3}$. $\frac{5}{7}-\frac{1}{3}=$
5. From $\frac{6}{7}$ subtract $\frac{2}{3}$. $\frac{6}{7}-\frac{1}{3}=$
6. From $1\frac{1}{7}$ subtract $\frac{1}{3}$. $1\frac{1}{7}=\frac{8}{7}=\frac{24}{21}$

a. From $29\frac{1}{7}$ subtract $12\frac{1}{3}$.

b. From $46\frac{1}{7}$ subtract $11\frac{1}{3}$.

c. From $84\frac{1}{7}$ subtract $12\frac{1}{3}$.

d. From $97\frac{1}{7}$ subtract $25\frac{1}{3}$.

$$\begin{array}{r} 29\frac{1}{7} \\ 12\frac{1}{3} \\ \hline \end{array}$$

7. $\frac{3}{4}$ of a foot $\times 3$ =
8. 24 feet $\times 3$ =
9. $24\frac{3}{4}$ feet $\times 3$ =

$$\begin{array}{r} 24\frac{3}{4} \\ 3 \\ \hline \end{array}$$

e. Multiply $23\frac{3}{5}$ by 2.

f. Multiply $42\frac{3}{5}$ by 2.

$$\begin{array}{r} 23\frac{3}{5} \\ 2 \\ \hline \end{array}$$

Add:

g	*h*	*i*	*j*
$12\frac{1}{7}$	5.24	13.20	2 hr. 20 min.
13	1.36	15.40	3 hr. 20 min.
$25\frac{1}{3}$	2.45	6.50	4 hr. 20 min.
32	1.37	12.30	5 hr. 30 min.
$46\frac{2}{7}$	6.12	2.40	2 hr. 30 min.
38	5.10	7.20	3 hr. 30 min.
$49\frac{2}{3}$	8.13	41.10	1 hr. 30 min.
51	9.05	12.15	2 hr. 30 min.
28	6.20	8.05	2 hr. 30 min.

1. $\frac{3}{4} \div \frac{1}{3}$. This means, *find how many times* $\frac{1}{3}$ *is contained in* $\frac{3}{4}$. I can change thirds and fourths to ——ths.

$$\frac{1}{3} = \frac{\quad}{12} \qquad \frac{3}{4} = \frac{\quad}{12}$$

$\frac{4}{12}$ are contained in $\frac{9}{12}$ —— and —— —— times.
4 dollars are contained in 9 dollars ————.
4 apples are contained in 9 apples ————.
4 twelfths are contained in 9 twelfths ————.

2. $\frac{3}{4} \div \frac{1}{5}$. This means ————.
I can change fifths and fourths to ——ths.

$$\frac{1}{5} = \frac{\quad}{20} \qquad \frac{3}{4} = \frac{\quad}{20}$$

$\frac{4}{20}$ are contained in $\frac{15}{20}$ —— and —— —— times.
4 dollars are contained in 15 dollars ————.
4 apples are contained in 15 apples ————.
4 hundredths are contained in 15 hundredths ——.

3. At \$4 a cord, for \$15 one can buy ————.

4. At $\frac{1}{5}$ of a dollar a yard, for $\frac{3}{4}$ of a dollar one can buy —— and —— —— yards.

5. Divide $\frac{4}{5}$ by $\frac{1}{4}$. This means —— —— ——, etc.

6. Divide $\frac{4}{5}$ by $\frac{1}{3}$. This means —— —— ——, etc.

Subtract:

a	*b*	*c*	*d*
$76\frac{1}{4}$	46.5	45.32	8 hr. 20 min.
$32\frac{3}{4}$	12.7	18.16	2 hr. 30 min.

1. Add $\frac{1}{2}$ and $\frac{3}{14}$. (Change 1 half to ——ths.)

2. From $\frac{1}{2}$ subtract $\frac{3}{14}$.

3. Multiply $\frac{3}{7}$ by 5. Five times 3 sevenths are —— ——.

4. Multiply 14 by $\frac{3}{7}$. This means, *find* 3 *sevenths of* 14. $\frac{3}{7}$ of 14 =

5. Multiply 14 by $2\frac{3}{7}$. This means ————.

6. Divide $\frac{3}{7}$ by $\frac{1}{14}$. This means, *find how many times, etc.*

7. Divide 2 by $\frac{1}{7}$. This means, *find how many times, etc.*

8. Divide $\frac{1}{7}$ by 2. This means, *find* 1 *half of* 1 *seventh.*

a. Multiply 15 dollars and 26 cents by 5.

b. Multiply 15 and 27 hundredths by 5.

c. Multiply 24 dollars and 35 cents by 6.

d. Multiply 24 and 32 hundredths by 6.

e. Multiply 34 dollars and 3 dimes by 4.

f. Multiply 34 and 6 tenths by 4.

g. Multiply 28 dollars and 16 cents by three.

h. Multiply twenty-eight and sixteen hundredths by four.

i. Multiply forty-three dollars and twenty-five cents by four.

j. Multiply forty-three and twenty-five hundredths by three.

k. Multiply forty-six and three tenths by seven.

1. How many days from September 20 to October 13? 10 more days in September plus 13 days in October are —— days.

2. If Sept. 20 is Thursday, what day of the week is Oct. 13? From Sept. 20 to Oct. 13 it is —— days. 23 days are —— weeks and —— days. Three weeks from Sept. 20 will be Thursday. Three weeks and 2 days from Sept. 20 will be ——.

3. How many days from Oct. 25 to Nov. 16? Ans. 6 and 16. This is —— weeks and —— day. If Oct. 25 is Monday, Nov. 16 is ——.

4. Three fifths of 15 inches are —— inches.

5. Fifteen inches are 3 fifths of —— inches.

6. A boy sold 2 thirds of the potatoes he raised and had 5 bushels left. How many bushels did he raise? How many bushels did he sell?

a. A farmer sold 2 thirds of the wheat he raised and had 275 bushels left. How many bushels did he raise? How many bushels did he sell?

b. 3560 ounces are how many pounds?

$$
\begin{array}{r}
16)3560(222\tfrac{1}{2} \\
\underline{32} \\
36 \\
\underline{32} \\
40 \\
\underline{32} \\
8
\end{array}
$$

$\frac{8}{16} = \frac{1}{2}$

c. Divide 3698 by 16

d. Divide 5010 by 16

e. Divide 3396 by 16

f. Divide 3539 by 16

g. Divide 4992 by 16

h. Divide 5168 by 16

i. Divide 3248 by 16

Miscellaneous Problems

1. Robert had \$1.25; this was $\frac{1}{3}$ as much as Peter had; Peter had ——.

a. Mr. Bright had \$24.30; this was $\frac{1}{3}$ as much as Mr. James had. How much money did Mr. James have?

2. Frank's book cost \$1.20; his slate cost $\frac{1}{3}$ as much; his slate cost ——.

b. Mrs. Hill's carpet cost \$54.78; her curtains cost $\frac{1}{3}$ as much. How much did her curtains cost?

3. In $1\frac{1}{2}$ hours there are —— minutes.

c. How many minutes in $7\frac{1}{2}$ hours?

4. At $\frac{1}{5}$ of a dollar a yard, 10 yards of ribbon cost —— dollars.

d. At $\frac{1}{5}$ of a dollar a yard, how much will 275 yards of ribbon cost?

e. Paid \$70 for 17 tons of coal. How much did it cost per ton?

```
17)$70.00($4.11 + *
   68
   ---
   20        2 17's =  34
   17        3 17's =  51
   --        4 17's =  68
   30        5 17's =  85
   17        6 17's = 102
   --
   13
```

f. Divide \$38 by 17

g. Divide \$53 by 17

h. Divide \$69.90 by 17

* Which is nearer to the exact cost of the coal, \$4.11 or \$4.12?

Miscellaneous Problems

1. Robert had $1.20; Peter had $\frac{1}{3}$ as much; Peter had ——.

a. Mr. Ford had $64.20; Mr. Davis had $\frac{1}{3}$ as much. How much money did Mr. Davis have?

2. Alice's hat cost $1.20; her gloves cost $\frac{2}{3}$ as much; her gloves cost ——; both together cost ——.

b. Mr. Pratt's buggy cost $136.50; his horse cost $\frac{2}{3}$ as much. How much did his horse cost? How much did both together cost?

3. Verne's gloves cost $1.20; this was $\frac{2}{3}$ as much as her hat cost; her hat cost ——; both together cost ——.

c. Mrs. Hill's new curtains cost $85.40; this was $\frac{2}{3}$ as much as her carpets cost. How much did the carpets cost? How much did both together cost?

d. 36.8 is $\frac{2}{3}$ of what number? *e.* $\frac{2}{3}$ of 36.6 =

f. 54.2 is $\frac{2}{3}$ of what number? *g.* $\frac{2}{3}$ of 55.2 =

Add:

h	*i*	*j*	*k*
$35\frac{1}{2}$	58.2	$31.20	5 wk. 2 da.
26	37.2	$84.40	3 wk. 4 da.
52	91.3	$12.10	2 wk. 1 da.
37	8.25	$ 6.05	5 wk. 3 da.
46.2	6.37	$ 5.02	2 wk. 2 da.

1. An oblong 1 inch wide and 12 inches long contains —— square inches. It is —— —— of a square foot.

2. An oblong 3 inches wide and 12 inches long contains —— square inches. It is —— ——of a square foot.

3. Twenty-four square inches are —— —— of a square foot.

4. Forty-eight square inches are —— —— of a square foot.

5. An oblong 6 inches wide and 12 inches long contains —— square inches. It is —— —— of a square foot.

6. A rectangle 6 in. by 6 in. contains —— square inches. It is —— —— of a square foot.

7. Sixty square inches are —— —— of a square foot.

8. Draw upon the blackboard very carefully a $3\frac{1}{2}$-foot square. Try to divide it so that you may see how many square feet it contains.

9. $3\frac{1}{2}$ multiplied by $3\frac{1}{2}$ means, 3 *times* $3\frac{1}{2}$ *plus* $\frac{1}{2}$ *of* $3\frac{1}{2}$. 3 times $3\frac{1}{2}$ are ——. $\frac{1}{2}$ of $3\frac{1}{2}$ is ——. $10\frac{1}{2}$ plus $1\frac{3}{4}$ = ——.

10. Multiply $4\frac{1}{2}$ by $4\frac{1}{2}$ $\quad 4\frac{1}{2} \times 2\frac{1}{2} =$

Subtract :

a	*b*	*c*	*d*
94.7	65.3	$54.20	5 wk. 4 da.
$29\frac{1}{2}$	21.8	$11.75	1 wk. 6 da.

ADDITION

a	*b*	*c*	*d*	*e*
$536\frac{1}{5}$	$537\frac{1}{2}$	85.2	36.24	7.42
74	86	175.3	5.02	8.67
$185\frac{1}{4}$	275	64	7.32	2.84
126	$326\frac{3}{20}$	$326\frac{6}{20}$	78	3.96
$78\frac{3}{20}$	175	75	$39\frac{5}{20}$ *	7.58
642	54	144	75	2.75

SUBTRACTION

f	*g*	*h*	*i*	*j*
$975\frac{3}{20}$	874	864	36.75	37.4
$146\frac{1}{20}$	$287\frac{11}{20}$	235.3	21.46	18.7

MULTIPLICATION

k	*l*	*m*	*n*	*o*
$246\frac{3}{20}$	581	362	8.75	825
7	$5\frac{1}{7}$	34	6	4.3

DIVISION

p	*q*	*r*	*s*
$3\frac{1}{2})168$ †	\$.06)\$8.34 ‡	6)8.34 ‡	\$.04)\$11

* $\frac{5}{20}$ = how many hundredths ?

† Change the divisor and the dividend to halves.

‡ What does it mean ?

LONG DIVISION

a

$258
25)$6450
50
145
125
200
200

b

$21.5
25)$537.5
50
37
25
12.5
12.5

c

$3.17
25)$79.25
75
4.2
2.5
1.75
1.75

d. Divide $3250 by 25*

e. $8125 ÷ 25 =

f. Divide $572.5 by 25

g. $547.5 ÷ 25 =

h. Divide $61.75 by 25

i. $83.50 ÷ 25 =

j

258 times
$25)$6450
50
145
125
200
200

k

215 times
$2.5)$537.5✓
50
37
25
12.5
12.5

l

317
$.25)$79.25✓
75
4.2
2.5
1.75
1.75

m. Divide $6125 by $25†

n. $2875 ÷ $25 =

o. Divide $337.5 by $2.5

p. $712.5 ÷ $2.5 =

q. Divide $84.50 by $.25

r. $55.50 ÷ $.25 =

* What does it mean ?

† Tell the meaning of this and of the following problems, and give illustrative business problems in which the figure processes here indicated would be required.

ADDITION

a	*b*	*c*	*d*
$308\frac{1}{7}$	$506\frac{1}{2}$	75.4	25 bu. 2 pk.
$64\frac{3}{4}$	$87\frac{1}{7}$	31.8	34 bu. 2 pk.

SUBTRACTION

e	*f*	*g*	*h*
$187\frac{1}{2}$	$274\frac{1}{2}$	35.6	54 bu.
$38\frac{1}{14}$	$146\frac{1}{7}$	20.8	31 bu. 3 pk.

MULTIPLICATION

i. Multiply 54 by 32
k. Multiply 53 by 35
m. Multiply $53\frac{1}{2}$ by 35
o. Multiply $45\frac{1}{2}$ by 24
q. Multiply 48 by $25\frac{1}{2}$
s. Multiply. 56 by $23\frac{1}{4}$
u. Multiply 64 by $18\frac{3}{4}$
w. Multiply 86 by $21\frac{1}{2}$

j. $54 \times 3.2 =$
l. $53.5 \times 35 =$
n. $54.3 \times 35 =$
p. $45.5 \times 24 =$
r. $48 \times 25.5 =$
t. $56 \times 23.2 =$
v. $64 \times 18.7 =$
x. $86 \times 21.5 =$

DIVISION

a. Divide 2106 by 26
c. Divide 1272 by 74
e. Divide 4150 by 25
g. Divide 8372 by 26
i. Divide 5842 by 23
k. Divide 8235 by 27
m. Divide 6345 by 27

b. $220.8 \div 24 =$
d. $687.5 \div 25 =$
f. $57.46 \div 26 =$
h. $31.75 \div 25 =$
j. $637.2 \div 27 =$
l. $820.8 \div 27 =$
n. $63.18 \div 27 =$

Definitions and Explanations*

A **unit** is one.

A **number** is one or it is composed of ones.

Notation is the art of expressing numbers by figures or other characters.

ARABIC NOTATION

In the Arabic notation **figures** are employed. The figures are: 1, 2, 3, 4, 5, 6, 7, 8, 9, 0.

In the number 29, the figure 9 is said to stand in the *first place*, and the figure 2 in the *second place*.

In the number 437, the figure 7 is said to stand in the first place, the figure 3 in the second place, and the figure 4 in the *third place*.

In the number 8156, the figure 6 is said to stand in the first place, the figure 5 in the second place, the figure 1 in third place, and the figure 8 in the *fourth place*.

A figure in the first place expresses *units*.

A figure in the second place expresses *tens*.

A figure in the third place expresses *hundreds*.

A figure in the fourth place expresses *thousands*.

A figure in the fifth place expresses *tens of thousands*.

In the number 4.65, the figure 6 is said to be in the *first decimal place;* the figure 5, in the *second decimal place*.

A figure in the first decimal place expresses *tenths*.

* See that the pupil can read the following pages intelligently before he is asked to commit to memory any part of them.

A figure in the second decimal place expresses *hundredths*.

Tell what each figure expresses in the following combination: 2764.35.

ROMAN NOTATION

In the Roman notation **seven capital letters** are employed. The letters are: I, V, X, L, C, D, M.

I = 1, V = 5, X = 10, L = 50, C = 100, D = 500, M = 1000.

PRINCIPLES

When a letter is repeated, its value is repeated. XX = 20; II = 2.

When a letter is placed after one of greater value, the sum of their values must be taken. VI = (5 + 1) = 6.

When a letter is placed before one of greater value, the difference of their values must be taken. IX = (10 − 1) = 9.

When a letter is placed between two letters each of greater value, its value is taken from the last letter. XIX = 10 + 10 − 1 = 19.

Placing a short horizontal line over a letter multiplies its value by 1000. $\overline{X}$ = 10,000.

Sometimes small letters are employed instead of capitals; thus, ii = 2, iv = 4, etc.

ROMAN NOTATION TABLE

I = 1	XXX = 30	XXXVIII = ———.
II = 2	XL = 40	XLVI = ———.
III = 3	L = 50	MDCC = ———.
IV = 4	LX = 60	XCIX = ———.
V = 5	LXX = 70	CCCVI = ———.
VI = 6	LXXX = 80	DXLV = ———.
VII = 7	XC = 90	XXIV = ———.
VIII = 8	C = 100	XXXIV = ———.
IX = 9	CC = 200	LXXVI = ———.
X = 10	CCC = 300	XLVII = ———.
XI = 11	CD = 400	XXXII = ———.
XII = 12	D = 500	XCVII = ———.
XIII = 13	DC = 600	LVIII = ———.
XIV = 14	DCC = 700	CCXIX = ———.
XV = 15	DCCC = 800	DXIX = ———.
XVI = 16	CM = 900	MXIX = ———.
XVII = 17	M = 1000	LXXXI = ———.
XVIII = 18	MM = 2000	LXIV = ———.
XIX = 19	$\overline{V}$ = 5000	MDCCC = ———.
XX = 20		MDCCCXCVI = ———.

Abraham Lincoln was born February XII., in the year of our Lord MDCCCIX.

The Roman notation is now chiefly employed in numbering chapters or lessons, in dates, and upon the dials of timepieces.

How is the number four represented upon the face of a clock ?

ADDITION

Addition is the process of uniting two or more numbers into one number.

The **sum** is the number obtained by adding.

$$\begin{array}{r} 26 \\ 49 \\ \hline 75 \end{array}$$ (Sum)

SUBTRACTION

Subtraction is the process of taking one number from (out of) another number.

The **minuend** is the number from which another number is taken.

The **subtrahend** is the number taken from another number.

The **difference** is the number obtained by subtracting.

$75	(Minuend)
$38	(Subtrahend)
$37	(Difference)

Observe that the sum of the subtrahend and difference equals the minuend.

MULTIPLICATION

Multiplication is the process of taking one number as many times as there are units in another.

The **multiplicand** is the number taken, or repeated.

The **multiplier** is the number that shows how many times the multiplicand is to be taken, or repeated.

$36	(Multiplicand)
25	M(ultiplier)
$180	
$72	
$900	(Product)

The **product** is the number obtained by multiplying.

In the example, $180 and $720 are called the partial (part) products. $180 is the product of $36 and 5; $720 is the product of $36 and 20.

Observe that dividing the product by the multiplier gives the multiplicand.

DIVISION

Division is one of *two* processes.

I. It is finding how many times one number is contained in another number; $\$18 \div \$2 = 9$.

II. It is finding one of the equal parts of a number; $\$18 \div 2 = \$9$.

To divide $\$18$ by $\$2$ means to separate $\$18$ into groups of $\$2$ each and *count the groups.* To divide $\$18$ by 2 means to separate $\$18$ into 2 equal groups, and *count the dollars in one group;* that is, find one half of $\$18$. In the first case the quotient tells *how many times* the divisor is contained in the dividend. In the second case the quotient is a *part of the dividend.*

To THE TEACHER. The second case is often very properly called *partition.*

The **dividend** is the number divided or separated.

The **divisor** is the number by which we divide.

The **quotient** is the number obtained by dividing.

Observe that in either case the product of the divisor and quotient equals the dividend.*

An even number is the number two, or a number that can be separated into twos; as, 4, 6, 20, 40, 44, etc.

A number that cannot be exactly separated into twos is called an odd number; as, 3, 5, 7, 21, 71, etc.

* Teach the pupils to "prove" their problems in division.

FRACTIONS

A **fraction** is one or more of the equal **parts** of a unit.

A fraction is usually expressed by two numbers, one of them being written above a short horizontal line and the other below it; thus, $\frac{3}{4}$, $\frac{2}{5}$, $\frac{3}{15}$.

The number above the line is called the **numerator**, and the number below the line the **denominator**.

The denominator shows the number of equal parts into which the unit is divided.

The numerator shows the number of parts taken.

The denominators of some fractions are not usually expressed by figures; thus, 5 tenths is usually written, .5; 27 hundredths is usually written, .27.

Of the fraction $\frac{7}{8}$, 7 is the numerator and 8 is the denominator. Of the fraction .5, 5 is the numerator and 10 is the denominator. Of the fraction .27, 27 is the numerator and 100 is the denominator.

If the numerator and the denominator of a fraction are the same number, as $\frac{8}{8}$, $\frac{12}{12}$, $\frac{20}{20}$, the fraction is equal to one unit. If the numerator of a fraction is greater than the denominator, as $\frac{8}{5}$, $\frac{11}{10}$, the fraction is equal to more than one unit.

A fraction whose numerator is equal to or greater than its denominator is called an **improper fraction**, as, $\frac{5}{4}$, $\frac{7}{7}$, $\frac{9}{5}$, $\frac{25}{20}$.

A fraction whose numerator is less than its denominator is called a **proper fraction**, as, $\frac{3}{4}$, $\frac{5}{6}$.

DRY MEASURE

2 pints (pt.) = 1 quart (qt.).
8 quarts = 1 peck (pk.).
4 pecks = 1 bushel (bu.).

LIQUID MEASURE

2 pints (pt.) = 1 quart (qt.).
4 quarts = 1 gallon (gal.).

MEASURE OF TIME

60 seconds (sec.) = 1 minute (min.).
60 minutes = 1 hour (h.).
24 hours = 1 day (da.).
7 days = 1 week (wk.).
28 to 31 days = 1 month (mo.).
12 months = 1 year (yr.).
365 days = 1 common year.
366 days = 1 leap year.
52 weeks and 1 day = 1 common year.
52 weeks and 2 days = 1 leap year.

LINEAR MEASURE

12 inches (in.) = 1 foot (ft.).
3 feet = 1 yard (yd.).

AVOIRDUPOIS WEIGHT

16 ounces (oz.) = 1 pound (lb.).
2000 pounds = 1 ton (T.).

SQUARE MEASURE

144 square inches (sq. in.) = 1 square foot (sq. ft.).
9 square feet. (sq. ft.) = 1 square yard (sq. yd.).

TABLES *

2 times 2 are 4.	2 times 3 are 6.	2 times 4 are 8.
3 times 2 are 6.	3 times 3 are 9.	3 times 4 are 12.
4 times 2 are 8.	4 times 3 are 12.	4 times 4 are 16.
5 times 2 are 10.	5 times 3 are 15.	5 times 4 are 20.
6 times 2 are 12.	6 times 3 are 18.	6 times 4 are 24.
7 times 2 are 14.	7 times 3 are 21.	7 times 4 are 28.
8 times 2 are 16.	8 times 3 are 24.	8 times 4 are 32.
9 times 2 are 18.	9 times 3 are 27.	9 times 4 are 36.

2 times 5 are 10.	2 times 6 are 12.	2 times 7 are 14.
3 times 5 are 15.	3 times 6 are 18.	3 times 7 are 21.
4 times 5 are 20.	4 times 6 are 24.	4 times 7 are 28.
5 times 5 are 25.	5 times 6 are 30.	5 times 7 are 35.
6 times 5 are 30.	6 times 6 are 36.	6 times 7 are 42.
7 times 5 are 35.	7 times 6 are 42.	7 times 7 are 49.
8 times 5 are 40.	8 times 6 are 48.	8 times 7 are 56.
9 times 5 are 45.	9 times 6 are 54.	9 times 7 are 63.

2 times 8 are 16.	2 times 9 are 18.	9 and 4 are 13.
3 times 8 are 24.	3 times 9 are 27.	8 and 5 are 13.
4 times 8 are 32.	4 times 9 are 36.	7 and 6 are 13.
5 times 8 are 40.	5 times 9 are 45.	9 and 5 are 14.
6 times 8 are 48.	6 times 9 are 54.	9 and 6 are 15.
7 times 8 are 56.	7 times 9 are 63.	8 and 7 are 15.
8 times 8 are 64.	8 times 9 are 72.	9 and 7 are 16.
9 times 8 are 72.	9 times 9 are 81.	9 and 8 are 17.

* Every number fact given in these tables must be perfectly mastered. Do not omit the eight facts of addition given in the last table.

SUGGESTIONS TO TEACHERS

Part I (pages 5 to 40) is at once a review and a test. If the pupil is prepared to read in a "third reader," and if the usual second-grade number work has been done, he will read these lessons without much hesitation. If he finds great difficulty in calling the words, lay the book aside and teach him to read. If he cannot readily fill the blanks and answer the questions, teach him orally the number facts given at the beginning of the odd-numbered pages.

THE PLAN OF PROCEDURE

Step I. The teacher takes the book. The pupils are without books and give their undivided attention to the teacher. The teacher reads one of the statements, pausing at the blanks for the pupils to supply the necessary word or words. Pupils signify their readiness to answer by raising their right hands. The teacher names the pupil who is to give the words to be supplied. (Occasionally, especially if the problems seem difficult, a pupil may come forward briskly and whisper his answer to the teacher. Another and another may follow rapidly until all who are prepared to do so have given answers. This promotes independence and enables the teacher better to judge of individual work.) If the teacher discovers that there are primary number facts introduced on the page which have not been memorized by the pupil, this should be attended to at once. Do not proceed until this has been thoroughly accomplished. It is better to spend several days, if necessary, in preparation for

reading a single page, than to attempt to read it without proper preparation.

Step II. See that the pupil is familiar with the written forms of all words appearing upon the page under consideration. Use the blackboard for this purpose, and, as a rule, show new words in the connection in which they appear in the book.

Step III. Put the books into the hands of the pupils and let them read silently the page or pages for which preparation has been made.

Step IV. The pupils may now read aloud the page which has been read silently. If the work of preparation has been thoroughly done, there will be but little hesitation on the part of the pupils in reading the page.

Step V. The pupils may copy (filling the blanks) some *designated part* of the page that has been read. Allow no careless written work. In examining the papers, make but two classes: those that are "perfect," and those that are "imperfect." The teacher is at fault if more than half of the papers are "imperfect." In a well-taught class, often 90 % of the papers will be "perfect." Spelling, capital letters, and punctuation, as well as accuracy of result, are to be considered in the examination of papers. If there be a single misspelled word, or one figure or one punctuation mark be wrong, the paper must be excluded from the "perfect paper" class. If the teacher fails to secure 50 to 75 % of "perfect papers," more time should be spent in preparation or the amount of work required of the pupil should be diminished. Better a single statement accurately written than a half page with many errors. The work of the teacher should be not mainly *the correction* but the *prevention* of errors.

From page 11 to page 232 the seat work may be in part, sometimes mainly, the figure work at the bottom of the pages.

4 in., etc. The pupil may say, "2 times 2 inches are 4 inches," or he may simply give the products. To see that the pupil understands this, say: "Show me two inches," "show me 2 times 2 inches," etc.

Page 14, Nos. 7 to 11. See note for page 10, Nos. 8 to 12.

Page 14, No. 15. The eight division problems (the quotient giving the number of parts into which the dividend is divided) that correspond to the eight multiplication problems on the preceding page are here given. Put them on cards in the form given in the book and require the pupil to say, "2 inches are contained in 10 inches, 5 times," etc.

To test the pupil's apprehension of these facts, the teacher may say, "How many *2 inches* in *10 inches?*"

Page 15, No. 14. The eight division problems (the quotient giving the size of the parts) that correspond to the eight multiplication problems on page 13 are here given. Put them on cards in the form given in the book and require the pupil to say, "One half of ten inches is five inches," etc.

Page 16, Nos. 7 to 11. See note for page 10, Nos. 8 to 12.

Page 16, No. 17. Twenty-five of the forty-five primary addition problems have thus far been given. Sixteen of these were given for review on page 11, and 9 more appear here. Put them upon cards and use them as suggested for the 16 on page 11. Insist on the perfect memorization of these primary number facts.

Page 17, No. 14. Use the 18 subtraction problems as suggested for the problems on page 12.

Page 18, No. 13. See that pupils memorize perfectly the 12 facts of multiplication here given. Each pupil should be able to give these facts in any order without hesitation. Good work done at this time will save much of the drudgery of "learning the tables."

Page 19, Nos. 7 to 15. The pupil should make many bundles of splints or toothpicks, each bundle containing exactly

is valueless. It requires the best effort of a *real teacher* to distinguish between answers that are the product of word memory and those that are the result of imaging and seeing relation.

Page 11, No. 9. Sixteen of the 45 primary addition problems have thus far been given and are here to be reviewed. Do not allow the pupil to say: "4 and 2 are 6," "3 and 1 are 4,"; but, *six, four, seven, eight,* etc. He should be able to read these 16 sums in 16 seconds or less.

Upon each of 16 cards put one of the primary addition problems as indicated below.

Shuffle the cards and then let the pupil "run them off" rapidly, giving the sum called for on each card. Note the time required for each pupil to do this.

Page 12, Nos. 11 to 15. See note for page 10.

Page 12, No. 16. Use the 24 subtraction problems as suggested for the 16 addition problems on the preceding page. The numbers may be given upon cards as follows: $6-4$, $4-3$, $7-5$, etc. The pupil should be able to give the 24 remainders in 24 seconds or less.

Page 13, No. 14. Teach the abbreviation *in.* for *inch* and *inches.* Eight of the primary multiplication problems have now been given. If each multiplication fact is mastered when it appears in the book, much of the drudgery of "learning the multiplication table" will be avoided. Some drill, however, will usually be necessary. Use cards as suggested for pages 11 and 12. The numbers may be given upon the cards as follows: 2 times 2 in., 2 times 3 in., 2 times

Page 24, No. 1. Explain to the pupil that a 1-inch square *is a square;* that a *square inch* is the equivalent of a 1-inch square and may be of any conceivable shape. It is the amount of surface that is equal to a 1-inch square.

Page 24, No. 10. Read as follows: 2¢ are contained in 60¢, 30 times, etc.

Require the pupils to make statements using the numbers in these problems, thus: Mary had 60¢; oranges cost 2¢ each; she could buy 30 oranges.

Page 25, No. 16. Read as follows: One half of 80¢ is 40¢, etc. Require pupils to make statements using the numbers in these problems, thus: William paid 80¢ for 2 melons; one melon cost 40¢.

Teach the use of the dollar sign ($), and of the abbreviation *d.* for dime or dimes.

Page 26, No. 7. 53 and 12. Teach the pupil first to add 10 to 53, making 63; then to add 2 to 63, making 65.

Page 26, No. 11. Pupils should be made familiar with the thermometer and its use before attempting problems like this. In many schools the pupils learn to read the thermometer in the first grade.

Page 26, No. 12. Thirty-two of the forty-five primary addition facts are here called for. Do not require pupils to name the figures, but to give sums only. Every pupil should be able to give these 32 sums in 50 seconds or less. First recite from left to right; then from right to left; then from the top downward; then from the bottom upward.

Page 27, No. 6. 38 − 12. Teach the pupil first to take 10 from 38, leaving 28; then to take 2 from 28, leaving 26.

Page 28, No. 11. To multiply $14 by 2 without using a pencil, think of $14 as $10 and $4. 2 times $10 are $20; 2 times $4 are $8; $20 and $8 are $28. See note for page 23, No. 10.

Page 29, No. 13. Read as follows: $2 are contained in $60, 30 times.

Require the pupils to make statements using the numbers in these problems, thus: A merchant paid $60 for hats at $2 each; he bought 30 hats.

Page 30. The purpose of the first 17 problems on the page is to familiarize the pupil with the words *sum, difference, product,* and *quotient.* Drill upon these and similar problems until each pupil understands and can use correctly these terms. Young pupils must learn words *by use,* not by definition.

Page 30, No. 18. Read as follows: One half of $20 is $10. Require the pupils to make statements using the numbers in these problems, thus: A man paid $20 for 2 sheep; one sheep cost $10.

Page 31, No. 21. If pupils do this and similar work, first without and then with the aid of a pencil, they will understand without much explanation why they are required to "carry one for every ten."

Teach the use of the abbreviation *yd.* for yard or yards.

Page 32, No. 14. 61 − 6. To solve this problem "mentally" the pupil will first take 1 from 61, leaving 60; then 5 from 60, leaving 55. To solve with the aid of a pencil he should think of 61 as 50 and 11; then take 6 from 11, leaving 50 and 5, that is, 55.

Page 33, No. 16. To multiply 25 feet by 2 without using a pencil, think of 25 feet as 20 feet and 5 feet. Two times 20 feet are 40 feet; two times 5 feet are 10 feet; 40 feet and 10 feet are 50 feet.

Page 34, No. 16. Read as follows: 2 ft. are contained in 12 ft., 6 times. Require pupils to make statements using the numbers in these problems, thus: A rope 12 ft. long was divided into pieces each 2 ft. long; there were 6 pieces.

Page 35. This work should be done orally before the pupil is asked to read the page.

Page 37, No. 15. To subtract 7 from 62 "mentally," first take 2 from 62, leaving 60; then 5 from 60, leaving 55.

To subtract, using a pencil, think of 62 as 50 and 12; then take 7 from 12, leaving 5; 50 and 5 equal 55.

Page 40. The number facts for review have been given on the little blackboards at the upper right-hand corners of the odd-numbered pages. These should be perfectly memorized by the pupil before he is allowed to begin PART II.

Page 41. The three new primary addition facts given on this page, together with the six correlative primary subtraction facts, must be perfectly memorized.

Page 44, Nos. 1 and 4. See note for page 10, Nos. 8 to 12.

Page 51, problems a to j. The graded figure-problems at the bottom of the pages are mainly for seat work, as indeed are all the problems in the book that are designated by the letters *a*, *b*, *c*, etc. Many of them may and should be solved "mentally" in class, before using the pencil. This is a necessary precaution to guard against the so-called *figure juggling*. In the "mental work" it is usually best to begin with the numbers of the highest order, thus: To add 138 and 106, first add 100 to 138; this gives 238; then add 6 to 238, giving 244. When the pupil discovers that he gets the same result whether he adds in this way "mentally," or whether he adds in the usual way with the aid of a pencil, little explanation will be necessary.

Page 52, problems a to j. In subtracting 105 from 254 with the aid of a pencil, think of 54 as made up of 40 and 14; then say, 5 from $14 = 9$, 0 from $4 = 4$, 1 from $2 = 1$. Little explanation and no "borrowing" are necessary in subtraction.

Page 53, problem e. Follow the plan prepared for pages 51 and 52. 235 multiplied by 2; 2 times 200 are 400; 2 times 30 are 60; $400 + 60 = 460$; 2 times 5 are 10; $460 + 10 = 470$. After that, multiply in the usual way and compare results.

Page 54, problem a. 75 divided by 3: think of 75 as made up of 60 and 15; 3 is contained in 60, 20 times, and in 15, 5 times; 20 and 5 are 25.

Page 59, No. 2. For "Nov. 20, 1906" substitute the date of the recitation.

Page 59, problems a to f. Require pupils to make problems like: At \$3 each how many sheep can I buy for \$72?

Page 60, problems a to h. Require pupils to make problems like the following: If 3 acres of land cost \$72, what is the cost of 1 acre?

Page 61, problem a. $236 + 209 = ?$ To add without using a pencil, think as suggested in the following: Two hundred thirty-six, four hundred thirty-six, four hundred forty . . . five, 445. (Think of 9 as made up of 4 and 5.)

Page 63, No. 5. The sign $\times$ has other meanings than the one here given; but to promote clear thinking but one meaning should be given to the pupil at this time.

Page 64, problems a to l. Require pupils to make specific problems involving the numbers and operations in those given in the book. The following examples are merely suggestive.

a. 462 books $\div$ 2 books: 462 books were distributed among some pupils, giving to each pupil 2 books. How many pupils?

c. 244 pages $\div$ 2 pages. If James reads 2 pages a day, in how many days will he read 244 pages?

e. 336 cents $\div$ 3 cents. At 3¢ each, how many oranges can be bought for 336¢?

Page 65, problems a to l. Illustrative examples.

a. 464 books $\div$ 2. Divide 464 books equally between 2 persons. How many does each receive?

d. 256 pages $\div$ 2. If I am required to read 256 pages in 2 days, how many pages should I read in 1 day?

k. 606 trees $\div$ 6. An orchard contained 606 trees in 6 equal rows. How many trees in each row?

Compare these problems with the corresponding problems on page 64.

462 books $\div$ 2 books means, *find how many times 2 books are contained in 462 books.*

464 books ÷ 2 means, *find one half of 464 books.*

Page 69, problems a to h. Illustrative Examples.

a. $550 ÷ $5. If one's traveling expenses are $5 per day, how many days can he travel for $550?

c. 360 crayons ÷ 3 crayons. We use on an average 3 crayons a day. 360 crayons will supply us how many days?

e. 480 qt. ÷ 4 qt. How many gallons in 480 quarts?

g. 640 bu. ÷ 2 bu. Put 640 bushels of oats into bags each containing 2 bushels. How many bags?

Page 70, problems a to h. Illustrative Problems.

a. $550 ÷ 5. Paid $550 for 5 buggies of uniform grade. How much did 1 buggy cost?

c. 480 quarts ÷ 4. A wholesale milk dealer divided 480 quarts of milk equally among 4 retailers. Each retailer received how many quarts?

e. 330 crayons ÷ 3. If I divide 330 crayons equally among 3 teachers, how many crayons will each teacher receive?

Page 73, No. 5. Do not allow the pupil to say "9 cents times 2." Such an expression is meaningless.

Page 74, problems a to l. Require pupils to give illustrative problems like those suggested for page 69.

Page 75, problems a to k. Require pupils to give illustrative problems like those suggested for page 70.

Page 77. Pupils should be required to estimate the weight of small objects, and then weigh them. Every school should be provided with a set of scales suitable for such work.

Page 78, problems a to l. Observe that the numbers here used as multiplicands are the weights of a bushel of oats, wheat, and shelled corn.

Page 87, No. 10. Be sure that the pupil understands that the multiplier cannot be a number of things: as *cents, inches,* or *apples.* It simply tells how many times (or what part of) the multiplicand is to be taken.

Pages 93, 94, 95. Make problems illustrating the figure work at the bottom of the pages.

Page 99, problem c. How many weeks in 147 days?

Page 104, problem a. Put up 125 lb. sugar in 5-pound packages. How many packages?

Page 105, problem a. If the perimeter of a square is 327 ft., how long is one of its sides?

Page 116, Nos. 7, 8, 9, 10. At first these lines may be carefully drawn; but at length the pupil should be able to *image the lines* without drawing them.

Page 129, Nos. 3, 4, 5. These problems and similar ones found on pages 99, 119, 139, etc., furnish necessary training as preparation for the work in percentage. Compare the following:

2 thirds of 18 = ?	66 % of 18 = ?
18 is 2 thirds of what?	18 is $66\frac{2}{3}$ % of what?
6 is what part of 18?	6 is what % of 18?

Page 130. Require approximate answers to many problems before finding the exact answer. Thus, for problem *c* the teacher may say, "If 4 acres of land cost $ 928, how much do you think one acre would cost?" The pupil replying, "More than $ 200," should be commended.

Page 138. Require the pupil to write the decimal point when in the process of multiplication he reaches it. Thus in solving problem *n* the pupil will say, "5 times 0 is 0," and write the zero in the product; "5 times 7 are 35," and write the 5 with the decimal point at the left.

Page 177, Nos. 4 to 7. In written work, when there is a decimal point in the divisor, a separatrix should be placed after that figure of the dividend that corresponds to the right-hand figure of the divisor; that is, if the right-hand figure of the divisor is *tenths*, place the separatrix after the tenths' figure of the dividend. If there is no tenths' figure in the dividend, make one — a zero — and follow it with the separatrix. The decimal point must be written in the quotient when, in the process of dividing, the separatrix is reached. This should not at first be done by the pupil

mechanically, but rather, thoughtfully, by observing that he is to find how many times *tenths* are contained in *tenths*. Later he may be allowed to do the work mechanically.

Page 179, problems a to c. See note for page 177.

Page 180, problems a to h. Observe that when the divisor is an integer, the decimal point in the quotient must be written when, in the process of division, the decimal point of the dividend is reached. The separatrix if used at all would fall over the decimal point in the dividend.

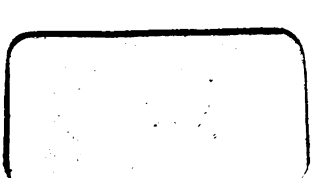
Page 215, problem f. In learning "long division," when the divisor is more than 12, the pupil before beginning to divide should make a table of multiples of the divisor as suggested by the table of 13's on this page.

Page 219, problem b. Observe that here the problem is to find how many times *14 hundredths* are contained in *3150 hundredths*. The separatrix helps to impress this fact.

Page 233, problem o. The pupil is required to find 4 times 825, plus 3 tenths of 825. Teach him to use the separatrix to indicate 1 tenth of 825.

Page 233, problem q. Use the separatrix to indicate that the pupil is to find how many times *6 hundredths* are contained in *834 hundredths*.

Page 233, problem s. Use the separatrix to indicate that the pupil is to find how many times *4 hundredths* are contained in *1100 hundredths*.

Page 234. In all division problems in which there is a *decimal in the divisor*, use the separatrix as suggested in the note for page 177. If pupils think what the problem means, they can easily determine the place of the decimal point in the quotient. Whenever there is trouble, say: *What does it mean?*

During the third and fourth school years this question must be repeated *a thousand times*, WHAT DOES IT MEAN?